PHOTOFACT* FOLDER SET

*TRADE MARK

NO. 129

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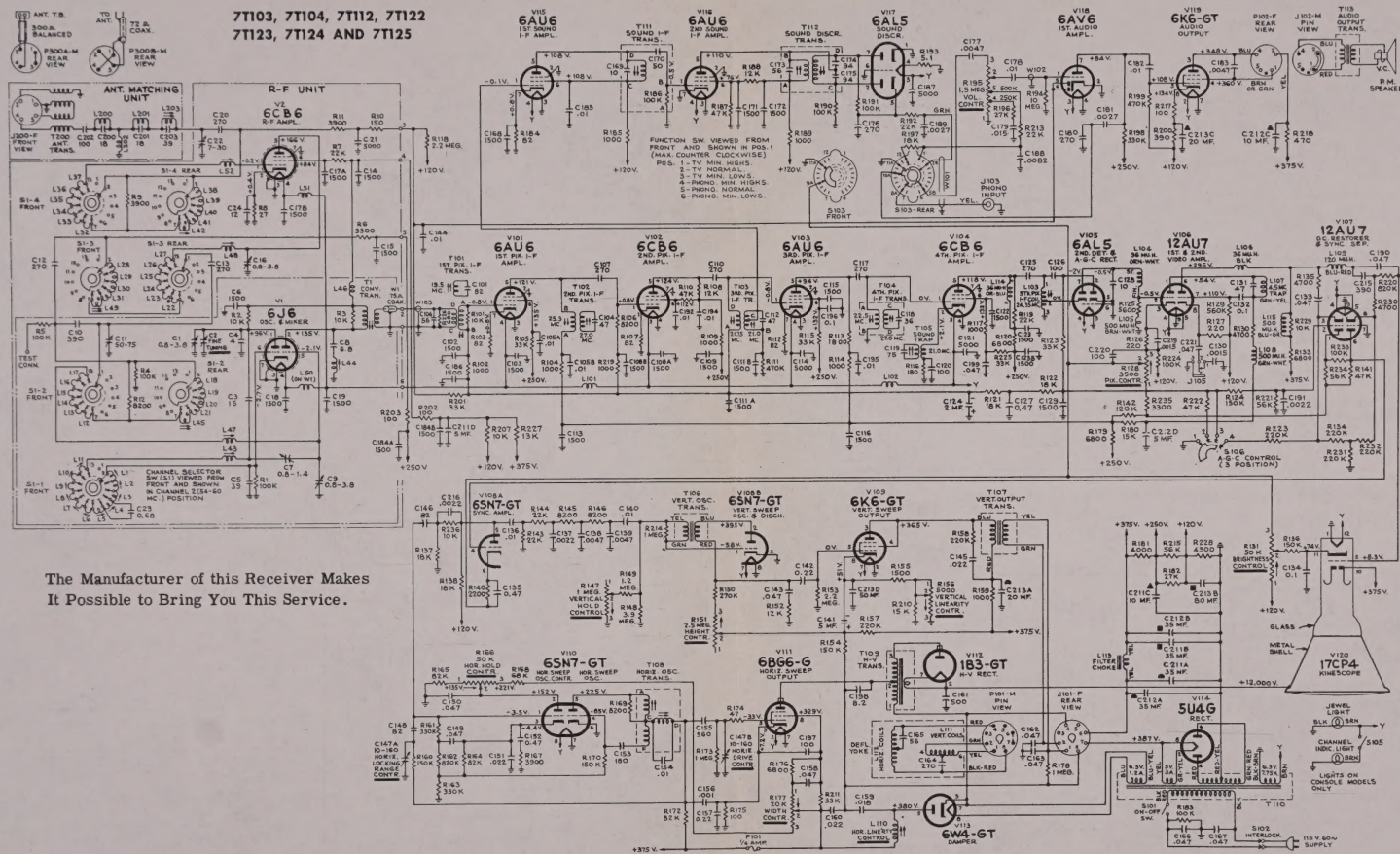


The Manufacturer of this Receiver Makes It Possible to Bring You This Service.

All resistance values in ohms. K = 1000.

All capacitance values less than 1 MF and above 1 in MMF unless otherwise noted.

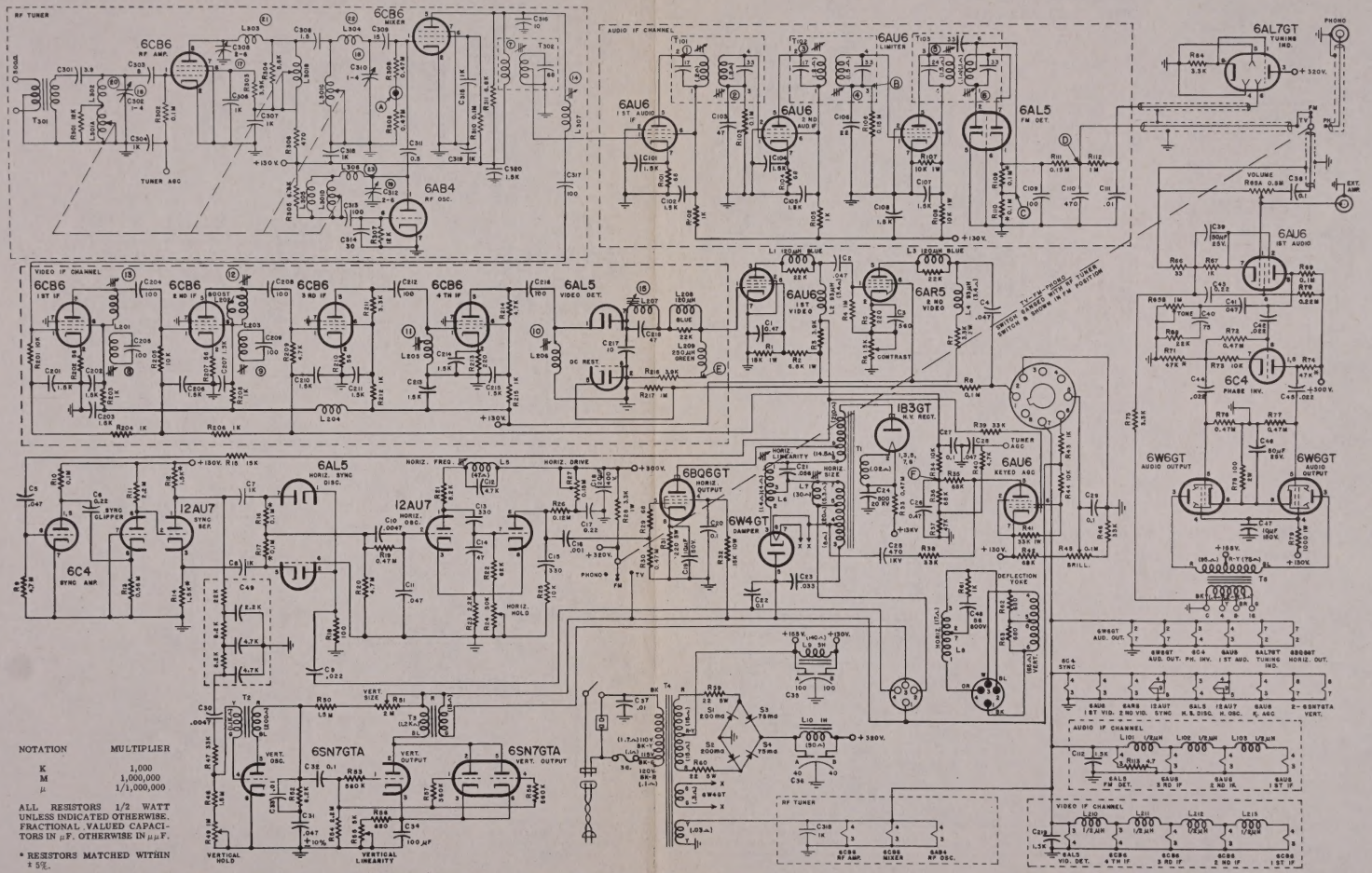
Coil resistance values less than 1 ohm are not shown.

Direction of arrows at controls indicates clockwise rotation.

In some receivers, substitutions have caused changes in component lead color codes, in electrolytic capacitor values and their lug identification markings.

All voltages measured with "Volt-Ohmyst" and with no signal input. Voltages should hold within ±20% with 117 v. a-c supply.

RCA VICTOR MODELS 7T103, 7T104 (Ch. KCS47B) 7T112, 7T122, 7T123, 7T124, 7T125 (Ch. KCS47C)



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RADIO CRAFTSMEN MODEL RC200

PRELIMINARY DATA
The data contained in this folder is published in advance of regular PHOTOFACT Coverage

SET 129 FOLDER 1A

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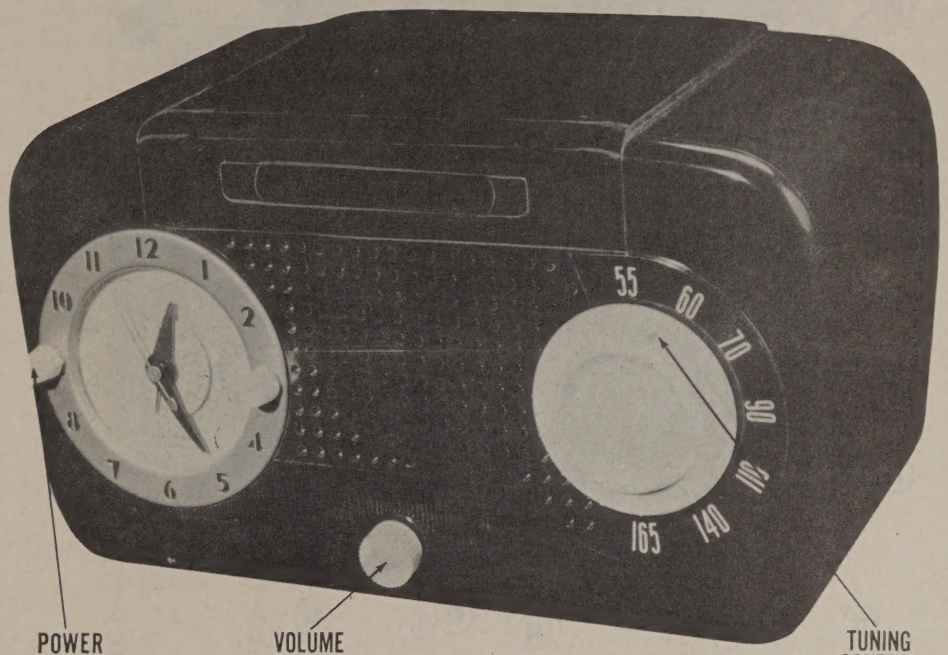
AIRCASTLE
MODEL 9151, W



AIRCASTLE
MODEL 9151, W

AIRCASTLE MODEL 915 I, W

TRADE NAME	Aircastle, Models 915 I, W
SUPPLIER	Spiegel Inc., 1061 W. 35th St., Chicago Ill.
TYPE SET	AC Operated TRF Receiver with Electric Clock.
TUBES (FOUR)	Types 12BA6 RF Amp., 12AT6 Det. - AF Amp., 50B5 Power Output, 35W4 Rectifier
POWER SUPPLY	105-125 Volts AC — RATING .25 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1650KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect a .1 Mfd. capacitor in series with the low side of the signal generator and chassis.
To set pointer, turn tuning gang fully closed and set pointer to last reference mark at the low frequency end of the dial.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	200MMF	High side to antenna terminal on antenna coil. (Remove hank antenna.) Low side to chassis.	1650KC	Tuning gang fully open.	Across voice coil.	A1, A2	Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amplifier	12BA6	12BA6	7BK	
V2	Det.-AF Amplifier	12AT6	12AT6	7BT	
V3	Power Output	50B5	50B5	7BZ	
V4	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRCASTLE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	150	31-11	PRS150/40-4[illegible]		EDL-4415		TVA-2445	Filter
B	40	150							Filter
C2	.004	400	32-11	P688-004	D6-402	PTE6D4	GP2M-004	6TM-D4	Ant. Coupling
C3	.25	200		P488-25		GT2P25		2TM-P25	RF Cathode Bypass *
C4	.004	400	32-11	P688-004	D6-402	PTE6D4	GP2M-004	6TM-D4	RF Coupling †
C5	100	500	35-4	1468-0001	D6-101	5W5T1	GP1K-100	1FM-31	AF Amp. Plate Bypass
C6	.004	400	32-11	P688-004	D6-402	PTE6D4	GP2M-004	6TM-D4	Audio Coupling ‡
C7	.01	400	32-8	P488-01	D6-103	PTE4S1	821-01	4TM-S1	Output Plate Bypass
C8	.015	400		P488-015		PTE6S15		6TM-S15	Line Filter §

* Some models use .05 MFD in this application.
† Some models use .002 MFD in this application.
‡ Some models use .01 MFD in this application.
§ Some models use .05 MFD in this application.

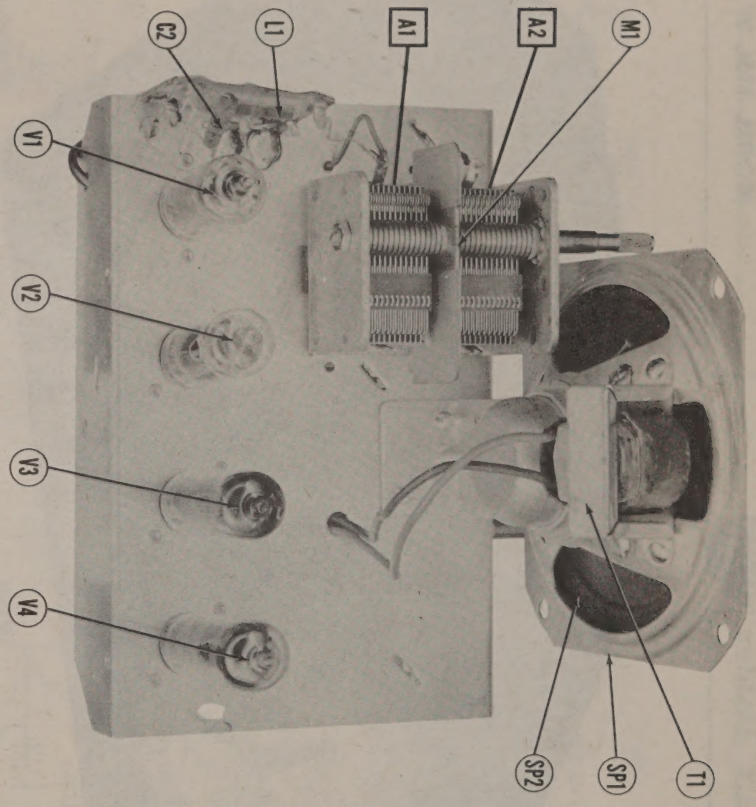
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1	100KΩ	½	50-14A				Volume Control

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Aircastle PART No.	IRC PART No.	IDENTIFICATION CODES
R2	680Ω	½	20-106	BTS-680	RF Cathode
R3	10 Meg	½	20-57	BTS-10 Meg	AF Amp. Grid
R4	470KΩ	½	20-92	BTS-470K	AF Amp. Plate
R5	470KΩ	½	20-92	BTS-470K	Output Grid
R6	150Ω	1	20-81	BW-150	Output Cathode
R7	3300Ω	1	20-80	BW-1-3300	Filter
R8	22Ω	½	20-93		Surge Limiter
R9	22Ω	1	20-96	BW-1-22	Filament Dropping

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ARICASTLE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	3000Ω	3.8Ω	200Ω	.6Ω	Part of SP1	A-3332 ①	A-3025 ①	RO-2 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA				INSTALLATION NOTES
			AIRCASTLE PART No.	JENSEN PART No.	QUAM PART No.		
	FIELD	V. C. IMP.		ST-113 ② ④			② Remount output transformer.
SP1	PM	3.8Ω	80-14	Model P4-X	4A07 ② ③		③ Use universal mounting bracket provided.
	CONE DIA.	V. C. DIA.					④ Fabricate new mounting bracket.
SP2	4"	9/16"					

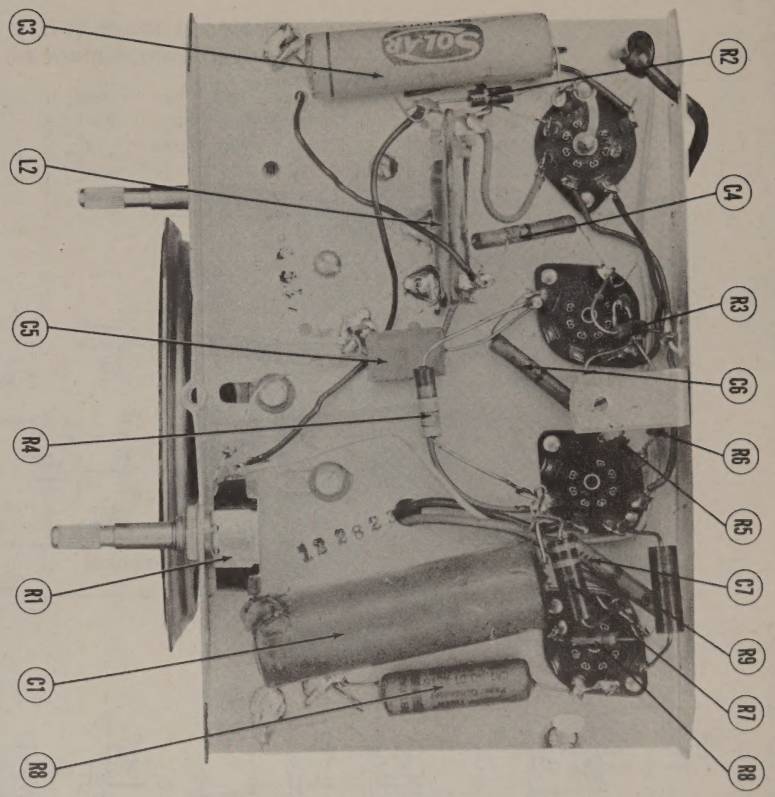
R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	AIRCASTLE PART No.	MEISSNER PART No.	
L1	Ant. Coil	30Ω	4Ω	62-14	14-1071	
L2	RF Coil	46Ω	0Ω	60-8	14-1072	

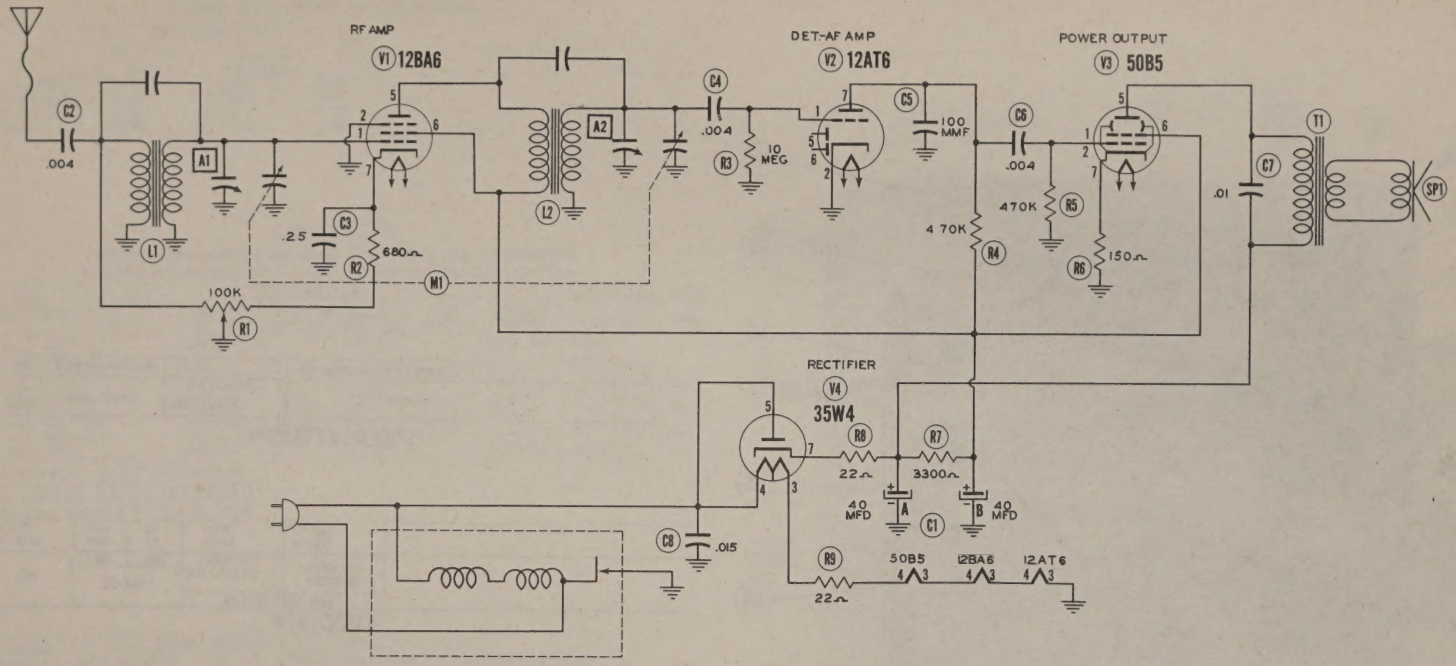
MISCELLANEOUS

ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
M1	2 Gang Var. Cap.		(38-462MMF, 45-484MMF)

CHASSIS—BOTTOM VIEW



AIRCASTLE MODEL 915 L, W



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BA6	0V	0V	11.5VAC	24VAC	100VDC	100VDC	3.6VDC
V 2	12AT6	-.4VDC	0V	0V	11.5VAC	0V	0V	35VDC
V 3	50B5	0V	6VDC	24VAC	78VAC	125VDC	100VDC	0V
V 4	35W4	125VDC	125VDC	80VAC	117VAC	117VAC	108VAC	130VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BA6	4Ω	0Ω	12Ω	24Ω	†3.3KΩ	†3.3KΩ	100KΩ
V 2	12AT6	10Meg	0Ω	0Ω	12Ω	Inf.	Inf.	†470KΩ
V 3	50B5	470KΩ	150Ω	24Ω	75Ω	†220Ω	†3.3KΩ	470KΩ
V 4	35W4	†22Ω	†22Ω	97Ω	130Ω	130Ω	120Ω	70KΩ

† MEASURED FROM PI N 7 OF V4.

THE COOPERATION OF THE MANUFACTURER OF THIS
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A PHOTOFACT STANDARD NOTATION SCHEMATIC

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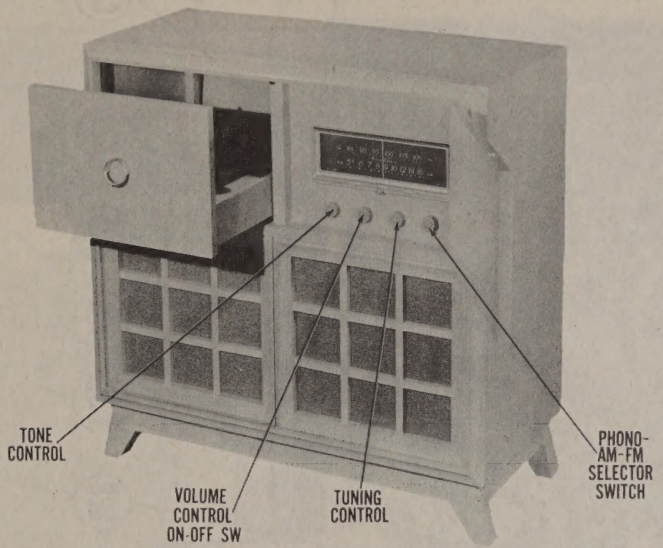
129-2

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

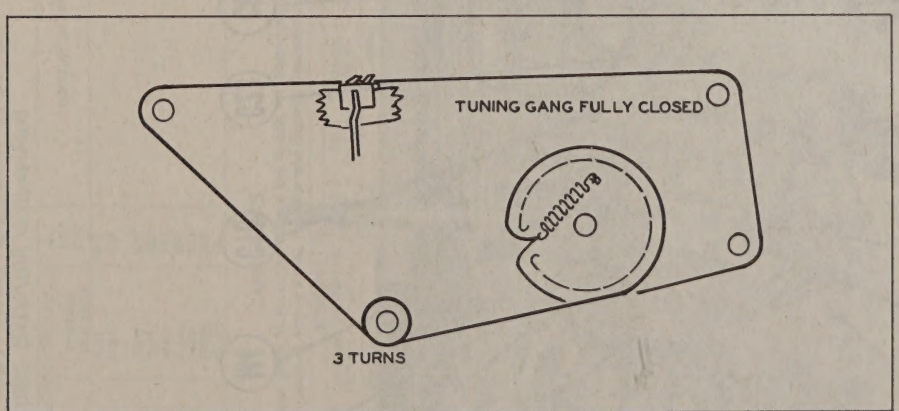
AIRLINE
MODEL 05WG-2749D



AIRLINE MODEL 05WG-2749D

TRADE NAME	Airline, Model 05WG-2749D
SUPPLIER	Montgomery Ward & Co., 619 Chicago Ave., Chicago, Ill.
TYPE SET	AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver
TUBES (NINE)	Types 6AB4 FM RF Amp., 6AB4 FM Mixer, 6BE6 FM Osc. - AM Conv., 6BA6 1st FM-AM IF Amp., 6BA6 FM 2nd IF Amp., 6AL5 Ratio DET., 6AV6 DET-AVC-AF, 6V6GT Power Output, 5Y3GT Rectifier
POWER SUPPLY 110-120 Volts AC	RATING .58 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST 540-1600KC	FREQ. MOD. 88-108MC

RECORD CHANGER -- WEBSTER-CHICAGO MODEL 100



AIRLINE
MODEL 05WG-2749D

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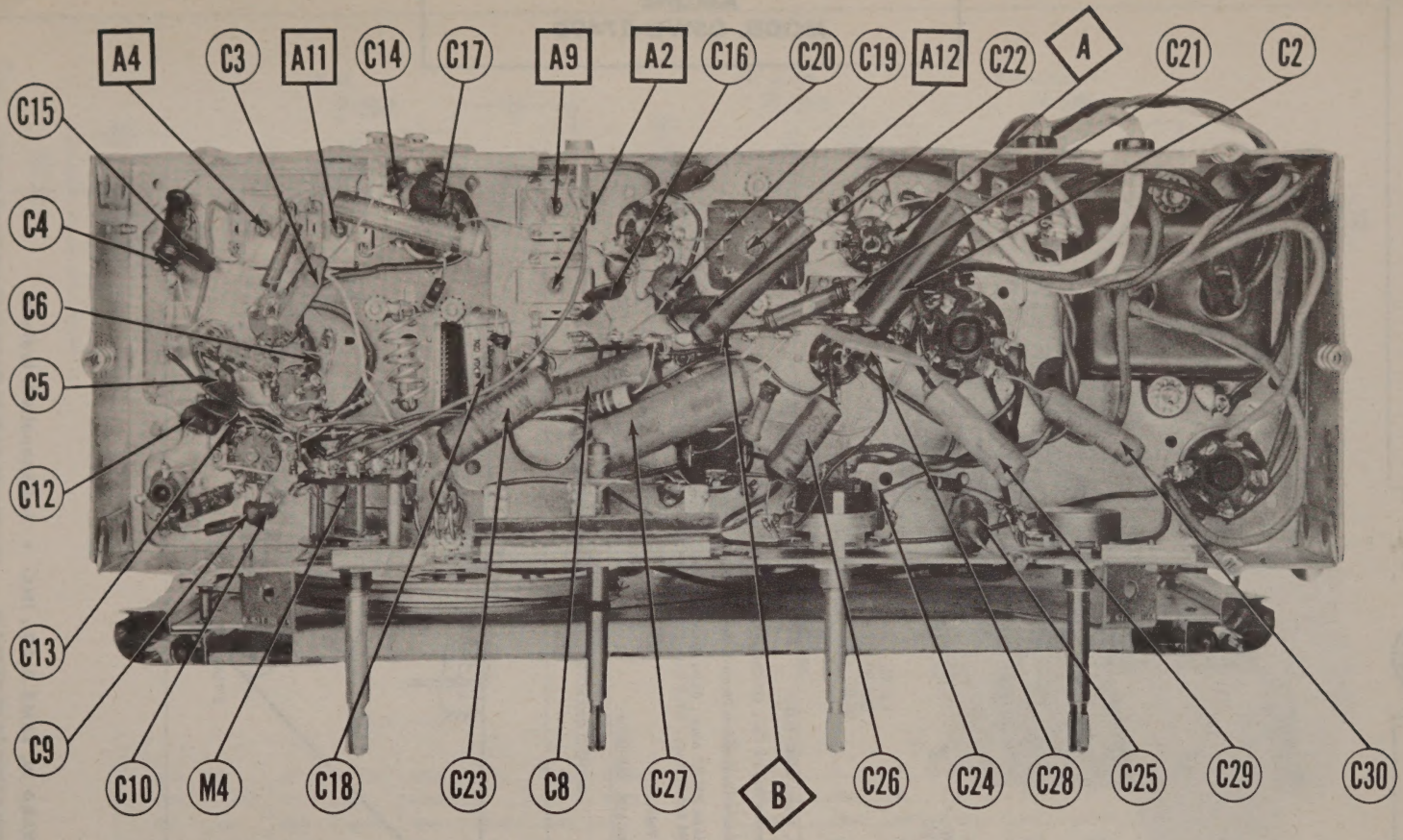
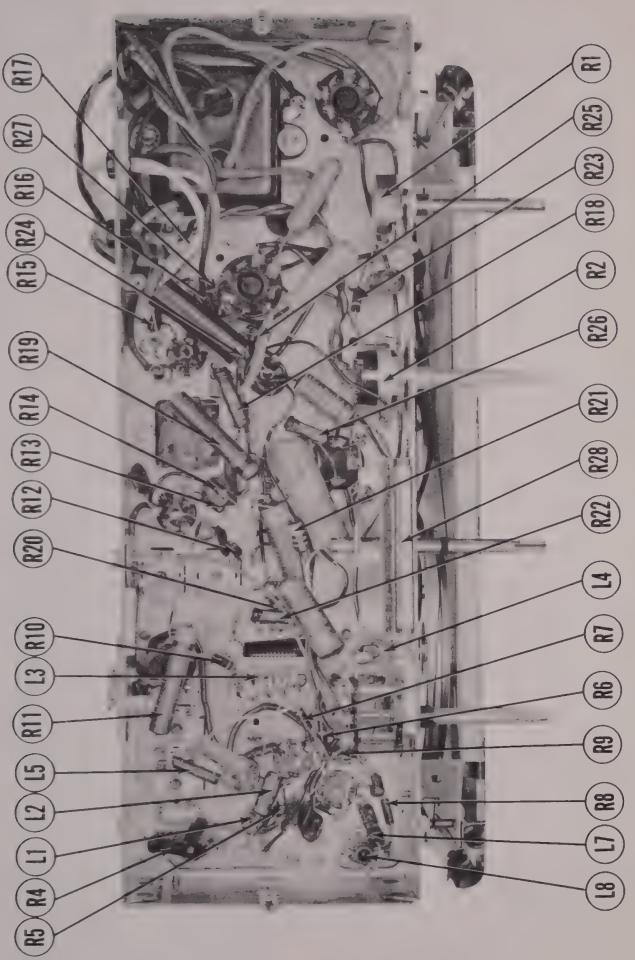
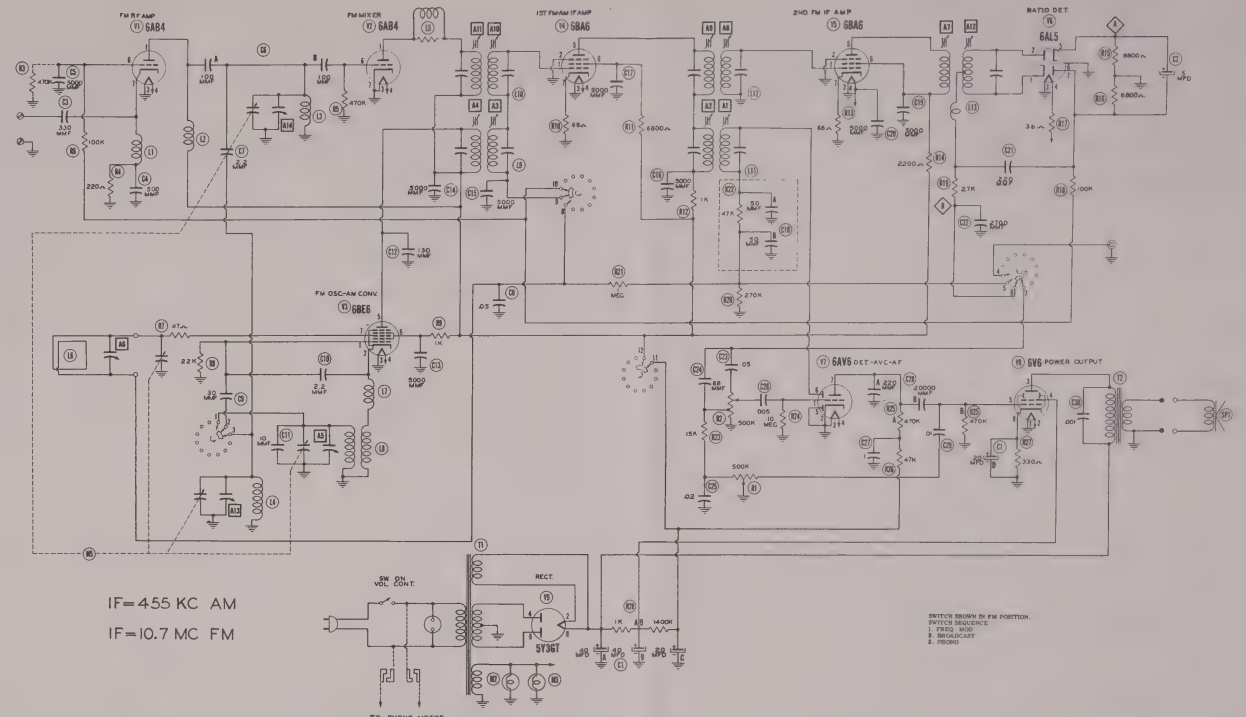

A4
C3
A11
C14
C17
A9
A2
C16
C20
C19
A12
C22
A
C21
C2
C15
C4
C6
C5
C12
C13
C9
C10
M4
C18
C23
C8
C27
B
C26
C24
C28
C25
C29
C30





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V1	6AB4	120VDC	0V	0V	6.3VAC	0V	1-.1VDC	1.3VDC	
V2	6AB4	120VDC	0V	0V	6.3VAC	0V	1-1.4VDC	0V	
V3	6BE6	99-2.5VDC	2.8-4.6 6VDC	0V	0V	6.3VAC	120VDC	100VDC	1-.1VDC
V4	6BA6	-.1VDC	0V	0V	0V	6.3VAC	120VDC	85VDC	.9VDC
V5	6BA6	0V	0V	0V	0V	6.3VAC	85VDC	85VDC	.8VDC
V6	6AL5	-.1VDC	-.1VDC	0V	0V	5.3VAC	.1VDC	0V	-.1VDC
V7	6AV5	-.8VDC	0V	0V	0V	6.3VAC	0V	-.4VDC	307VDC
V8	6V6GT	0V	0V	6.3VAC	260VDC	275VDC	0V	0V	0V	8VDC
V9	5Y3GT	0V	0V	250VDC	0V	305VAC	0V	305VAC	0V	250VDC

‡ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V1	6AB4	12-.6KΩ	0Ω	0Ω	.1Ω	Inf.	300KΩ	330Ω	
V2	6AB4	12-.6KΩ	0Ω	0Ω	.1Ω	Inf.	470KΩ	0Ω	
V3	6BE6	330Ω	3.3Ω	0Ω	.1Ω	12-.6KΩ	12-.6KΩ	1.3MEG	
V4	6BA6	100KΩ ±1.5MEG	0Ω	0Ω	.1Ω	12-.6KΩ	12-.8KΩ	98Ω	
V5	6BA6	1MΩ	0Ω	0Ω	.1Ω	14-.8KΩ	14-.8KΩ	98Ω	
V6	6AL5	Inf.	Inf.	0Ω	1.8Ω	8-.6KΩ	0Ω	8-.8KΩ	
V7	6AV5	10MEG	0Ω	0Ω	.1Ω	0Ω	330KΩ	1520KΩ	
V8	6V6GT	Inf.	.1Ω	1600Ω	11-.6KΩ	470KΩ	.4Ω	0Ω	330Ω
V9	5Y3GT	Inf.	69KΩ	Inf.	109Ω	Inf.	0Ω	Inf.	69KΩ

† MEASURED FROM PIN 8 OF V9

‡ TAKEN IN FM
* TAKEN IN AM

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**

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ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD.	High side to pin 7 (Grid) of 6BE6 (V3). Low side to chassis	455KC (400% mod)	AM (center)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	"	"	1620KC	"	"	"	A5	"
3.		Loop	1400KC	"	Tune for max. output.	"	A6	Fashion loop of several turns lit wire and radiate signal into loop of receiver. Adjust for maximum output. Set pointer to 1400 on AM dial scale.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	2500MMF	High side to pin 1 (Grid) of 6BA6 (V4) Low side to chassis	10.7MC (unmod.)	FM (CW)	Tuning gang fully open.	DC probe to point ⊕ Common to chassis.	A7, A8 A9	Adjust for max. deflection.
5.	"	High side to pin 6 (Grid) of 6AB4 (V2) Low side to chassis	"	"	"	"	A10, A11	"
6.	"	"	"	"	"	DC probe to point ⊕ Common to chassis.	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4	2500MMF	High side to pin 1 (Grid) of 6BA6 (V4) Low side to chassis	10.7MC (450KC swp)	FM (CW)	Point of non-interference.	Vert. amp. to point ⊕ Low side to chassis.	A7, A8 A9	Disconnect stabilizer capacitor C2, Adjust for maximum amplitude and symmetry as per figure 1.
5.	"	High side to pin 6 (Grid) of 6AB4 (V2) Low side to chassis	"	"	"	"	A10, A11	"
6.	"	"	"	"	"	Vert. amp. to point ⊕ Low side to chassis.	A12	Reconnect capacitor C2. Adjust A12 so 107 MC occurs at center of crossover lines as per fig 2. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
7.	300Ω carbon resistor	High side thru 300Ω to ungrounded FM antenna terminal. Low side to chassis	108.5MC (unmod.)	FM	Tuning gang fully open.	DC probe to point ⊕ Common to chassis.	A13	Adjust for max. deflection.
8.	"	"	104.5MC	"	Tune for max. deflection.	"	A14	"

FIG. 1

FIG. 2

CHASSIS—TOP VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA AIRLINE PART No.	REPLACEMENT DATA STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	FM RF Amplifier	6AB4	6AB4	SCE	
V2	FM RF Amplifier	6AB4	6AB4	SCE	
V3	FM Oscillator - AM Converter	6BE6	6BE6	7CH	
V4	1st FM IF Amp. And 2nd FM IF Amp.	6BA6	6BA6	7BK	
V5	Ratio Detector	6AL5	6AL5	6BT	
V6	Audio Output	6V6GT	6V6GT	7AC	
V7	Power Output	6V6GT	6V6GT	7AC	
V8	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmf. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	AIRLINE PART No.	ARROVOX PART No.	REPLACEMENT DATA CENTRALAB PART No.	REPLACEMENT DATA CORNELL-DUBILIER PART No.	BBE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES INSTALLATION NOTES
C1A	40	350	45X359			UP42X350		TVL-4005	• Filter
B	40	350		AFH8441A					▲ Filter
C	40	350							■ Filter
D	20	25							Output Cathode
C2	300	300	45X781	TPB1500/4		DH-531	GP2K-330	TVA-3408	Bypass & Coup.
C3	3.3	350	47X2701	S1350		SW3T5	GP2K-500	19C14	RF Coupling
C4	500		47X568	S1500		DH-561	GP2K-500	19C32	FM RF Amp. Cathode
C5	5000		47X5707	S15005		DD-502	GP1K-50	19C31	FM RF Amp.
C6A	100		47X107	S1100		DH-101	GP1K-100	19C11	RF Coupling
B	100		47X107	S1100		DH-101	GP1K-100	19C11	RF Coupling
C7	.05	200	45X5031			TC2-2			Osc. Grid Cap.
C8	.05	200	45X5031	P2S1-05		DF-503	PTE4S5	2TM-S5	AVC Filter
C9	30		47X3538	S1300		DH-300			Osc. Grid Cap.
C10	2.2		47X2238			TC2-22	GP1K-30	19C24	Osc. Coupling
C11	10		47X3231	S10NP0		TC2-10	SR5Q1	NP03C-10	Fixed Trimmer •
C12	150		47X3539			TC2-150		NT05C-150	Fixed Mixer Bypass
C13	1000		47X3529	B1P0-005		DD-502	1DSD5	19C1	Conv. Plate Dec.
C14	5000		47X3207	B1P0-005		DD-502	1DSD5	19C1	Conv. Plate Dec.
C15	5000		47X3207	B1P0-005		DD-502	1DSD5	19C1	1st IF Plate Dec.
C16	5000		47X3207	B1P0-005		DD-502	1DSD5	19C1	1st IF Screen
C17	5000		47X3207	B1P0-005		DD-502	1DSD5	19C1	1st IF Screen
C18A	50		47X112	S150		DH-500	SW5Q3	GP1K-50	Diode RF Filter
B	50			S150		DH-500	SW5Q3	GP1K-50	Diode RF Filter
C19	5000		47X3207	B1P0-005		DD-502	1DSD5	81L-005	2nd IF Dec.
C20	5000		47X3207	B1P0-005		DD-502	1DSD5	81L-005	2nd IF Dec.
C21	2200	500	47X3685	S1220		DH-221	SW3T25	GP2K-220	Diode Load Cap.
C22	3700		47X592	S12700		DH-372	SW3Z5	GP3K-0027	De-emphasis
C23	200	200	47X3683	S1200		DH-201	SW3Z5		AVC Network
C24	68	500	47X471	S168		DH-680	SW5Q7	GP1K-68	Tone Comp.
C25	.02	300		P488-02		DF-203	PTE4S3	81L-005	Tone Comp. †
C26	.001	600	D45602	P488-1		DF-104	PTE4P1		AF Amp. Plate Dec.
C27	.1	400	D45604	P488-1		DF-104	PTE4P1	4TM-P1	AF Amp. Plate Dec.
C28A	220			S1220		DPC-30	SW3T25	19C13	AF Amp. Plate
B	220/200		†	S1220/200			SW3T25	GP2K-220	AF Amp. Plate
C29	.01	200	B45103	P488-01		DE-103	PTE4S1	821-01	Tone Comp.
C30	.001	600	B45102	P1068-001			PTE4S1	34P-01	Output Plate

• Some models use .01 MFD in this application
† Items C28A, C28B, R35A, and R35B are combined into one unit
‡ Some models use .01 MFD in this application

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	AIRLINE PART No.	REPLACEMENT DATA IRC PART No.	REPLACEMENT DATA CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R35	2500Ω	1	Not Req	Q12-252	2CP-2	B25K-60	Tone Control
A	Shaft		Not Req	Not Req		B25K-8	Attach to R1A per instructions
R35A	500KΩ	1	383272	Q12-133X	AE-80	B133K-8-8	Volume Control - Tapped @ 100KΩ
B	500KΩ		383273	Q12-503	AE-80	B503K-8-8	Attach to R2A per instructions
C	Switch		Not Req	76-1		SWB	

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	AIRLINE PART No.	REPLACEMENT DATA IRC PART No.	IDENTIFICATION CODES
R3	470KΩ‡		BR5474		FM RF Amp. Grid - See Note 1
R4	470KΩ‡		BR5473		FM RF Amp. Cathode
R5	470KΩ‡		385F4		FM Mixer Grid
R6	100KΩ		BR5104	BT3-100K	AVC Network
R7	47KΩ		BR5473		FM Mixer Resistor
R8	22KΩ		BR5223		AM Osc. Grid
R9	1000Ω		BR8810B	BT3-1000	AM Osc. Anode
R10	1000Ω	2	BA1000		1st IF Amp. Cathode
R11	68000Ω	2	BA6800	BT3-6800	1st IF Amp. Screen
R12	1000Ω		BR8810	BT3-1000	1st IF Amp Plate Decoupling
R13	1000Ω		BR8810	BT3-1000	2nd IF Amp. Cathode
R14	22000Ω		BR5223	BT3-2200	2nd FM IF Amp-Decoupling
R15	68000Ω		BR6803	BT3-6800	Ratio DET Diode Load
R16	68000Ω		BR6803	BT3-6800	Ratio DET Diode Load
R17	3.6Ω		43X3233	BW-1-3.6	Ratio DET Diode Filament - Wire Wound
R18	3.6Ω		43X3233	BW-1-3.6	Ratio DET Diode Filament - Wire Wound
R19	39KΩ‡		BR5393	BT3-39K	De-emphasis
R20	270KΩ‡		BR5274	BT3-270K	AVC Network
R21	470KΩ		BR5474	BT3-470K	AVC Network
R22	47KΩ		BR5473	BT3-47K	Diode Filter
R23	15KΩ		BR5153	BT3-15K	Tone Compensation
R24	330KΩ‡		BR5334	BT3-330K	AF Amp. Plate
R25A	470KΩ		BR5474	BT3-470K	AF Amp. Plate
B	470KΩ‡			BT3-470K	Output Grid
R26	470KΩ		385F4	BT3-470K	AF Amp. Plate Decoupling
R27	330Ω		43X3234	BW3-330	Output Cathode - See Note 2
R28	1000Ω	4			Filter - Wire Wound
R28A	1000Ω	4	43X3234		Filter - Wire Wound

† Items R35A, R35B, C28A, and C28B are combined into one unit
Note 1 Not used in all models
Note 2 Some models use 270Ω Resistor in this application

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC.-1	RATING SEC.-2	RATING SEC.-3	AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117V.A.C. 60 CY.	330V.C.T. @ 85MA	6.3V. @ 3.5A	5V. @ 2A	53X390			PRI-70 ①

① Add series resistor to reduce plate voltage

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	DC RES. PRI.	DC RES. SEC.	AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T2	5.6KΩ	4.3Ω	440Ω	0.5Ω	53X34	A-3877 ②	A3930 ②	RO-9 ②	② New mounting hole

SPEAKER

ITEM No.	RATINGS IMPEDANCE	RATINGS POWER	AIRLINE PART No.	JENSEN PART No.	CHICAGO PART No.	INSTALLATION NOTES
SP1	4 OHMS	12 WATTS	12A502	12J12	12A4A	
SP2	4 OHMS	12 WATTS				

REPLACEMENT DATA

ITEM No.	V	C	IMP.
SP1	1"	1"	3/4"
SP2	1"	1"	3/4"

CONE DIA. 5" V.C. DIA. 1"

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	AIRLINE PART No.	REPLACEMENT DATA IRC PART No.	IDENTIFICATION CODES
R3	470KΩ‡		BR5474		FM RF Amp. Grid - See Note 1
R4	470KΩ‡		BR5473		FM RF Amp. Cathode
R5	470KΩ‡		385F4		FM Mixer Grid
R6	100KΩ		BR5104	BT3-100K	AVC Network
R7	47KΩ		BR5473		FM Mixer Resistor
R8	22KΩ		BR5223		AM Osc. Grid
R9	1000Ω		BR8810B	BT3-1000	AM Osc. Anode
R10	1000Ω	2	BA1000		1st IF Amp. Cathode
R11	68000Ω	2	BA6800	BT3-6800	1st IF Amp. Screen
R12	1000Ω		BR8810	BT3-1000	1st IF Amp Plate Decoupling
R13	1000Ω		BR8810	BT3-1000	2nd IF Amp. Cathode
R14	22000Ω		BR5223	BT3-2200	2nd FM IF Amp-Decoupling
R15	68000Ω		BR6803	BT3-6800	Ratio DET Diode Load
R16	68000Ω		BR6803	BT3-6800	Ratio DET Diode Load
R17	3.6Ω		43X3233	BW-1-3.6	Ratio DET Diode Filament - Wire Wound
R18	3.6Ω		43X3233	BW-1-3.6	Ratio DET Diode Filament - Wire Wound
R19	39KΩ‡		BR5393	BT3-39K	De-emphasis
R20	270KΩ‡		BR5274	BT3-270K	AVC Network
R21	470KΩ		BR5474	BT3-470K	AVC Network
R22	47KΩ		BR5473	BT3-47K	Diode Filter
R23	15KΩ		BR5153	BT3-15K	Tone Compensation
R24	330KΩ‡		BR5334	BT3-330K	AF Amp. Plate
R25A	470KΩ		BR5474	BT3-470K	AF Amp. Plate
B	470KΩ‡			BT3-470K	Output Grid
R26	470KΩ		385F4	BT3-470K	AF Amp. Plate Decoupling
R27	330Ω		43X3234	BW3-330	Output Cathode - See Note 2
R28	1000Ω	4			Filter - Wire Wound
R28A	1000Ω	4	43X3234		Filter - Wire Wound

† Items R35A, R35B, C28A, and C28B are combined into one unit
Note 1 Not used in all models
Note 2 Some models use 270Ω Resistor in this application

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC.-1	RATING SEC.-2	RATING SEC.-3	AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117V.A.C. 60 CY.	330V.C.T. @ 85MA	6.3V. @ 3.5A	5V. @ 2A	53X390			PRI-70 ①

① Add series resistor to reduce plate voltage

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	DC RES. PRI.	DC RES. SEC.	AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T2	5.6KΩ	4.3Ω	440Ω	0.5Ω	53X34	A-3877 ②	A3930 ②	RO-9 ②	② New mounting hole

SPEAKER

ITEM No.	RATINGS IMPEDANCE	RATINGS POWER	AIRLINE PART No.	JENSEN PART No.	CHICAGO PART No.	INSTALLATION NOTES
SP1	4 OHMS	12 WATTS	12A502	12J12	12A4A	
SP2	4 OHMS	12 WATTS				

REPLACEMENT DATA

ITEM No.	V	C	IMP.
SP1	1"	1"	3/4"
SP2	1"	1"	3/4"

CONE DIA. 5" V.C. DIA. 1"

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA AIRLINE PART No.	REPLACEMENT DATA MESSNER PART No.	REPLACEMENT DATA IRC PART No.	NOTES
L1	RF Choke	.20		33A9		C1A	.47 Microhenry
L2	RF Choke	.53		33A10		C1A	3.3 Microhenries
L3	FM RF Coil	.90		9A3066			
L4	FM Osc. Coil	.90		9A3067			
L5A	Parasitic Supp.	.90					
B	Parasitic Supp.	.90	.9Ω	9A2103			
L6	Loop Ant.	.10	.9Ω	9A1972			Alternate Wound as 47Ω Resistor
L7	Cathode						
L8	AM Osc. Coil	1.8Ω	5.2Ω	35A5		C1A	2.2 Microhenries
L9	1st AM IF	.340	.340	9A3065	14-3073		
L10	1st FM IF	.140	1.3Ω	9A3062			
L11	2nd AM IF	.340	.140	9A3063	16-3497		
L12	2nd FM IF	.140	.140	9A3061			
L13	Ratio DET.	.340	.340	9A3064	16-3497		
L14	Ratio DET. Trans.	1.2Ω	.10	9A3161			

PHONO CARTRIDGE and NEEDLE

ITEM No.	AIRLINE PART No.	REPLACEMENT DATA ASTATIC PART No.	REPLACEMENT DATA SHURE PART No.	REPLACEMENT DATA ELECTRO-VOICE PART No.	REMARKS
		CONTROLLED TRACKING	CONTROLLED TRACKING	CONTROLLED TRACKING	
M1		ACD-J	W22A1B	45SD or 45SD-2	0-3 or 2-3 or 0-1 or 2-1
		A-3	45SD or A52A	56-2	

ASTATIC, SHURE AND ELECTRO-VOICE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA AIRLINE PART No.	REPLACEMENT DATA	NOTES
M2	Bayonet	6-8	.15	Brown	7AI03		Type 447
M3	Bayonet	6-8	.15	Brown	7AI09		Type 447

MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
M4	Switch	3A133	AM-FM-Phono
M5	Switch, Var. Cap.	3A1500	3 Gang, 14-18pfd&MFD
A2	Trimmer	17A235	RC Ant. Adj.
A3	Trimmer	17A385	FM Osc. Adj.
A13	Trimmer	17A235	
	Dial Glass	58X719	
	Dial Pointer	16X251	

PHOTOFACT* Folder

*TRADE MARK

AIRLINE MODELS
05WG-3038A, 05WG-3045A

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Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

MODEL 05WG-3045A

AIRLINE MODELS
05WG-3038A, 05WG-3045A

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10-428MU

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CROSLEY MODEL
10-428MU

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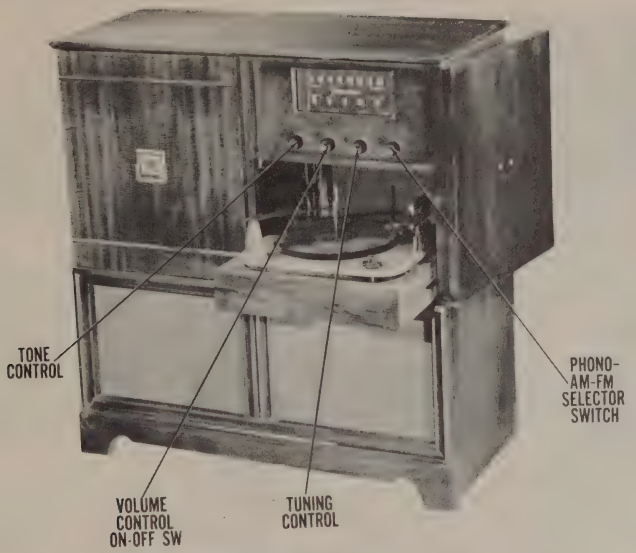
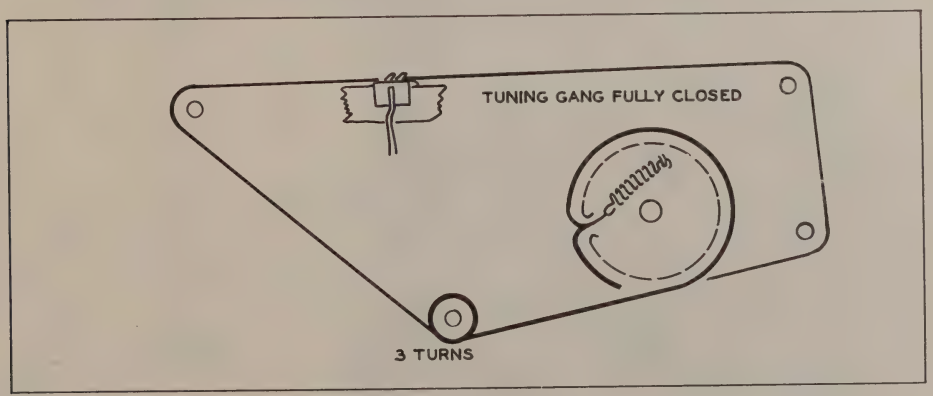


FIRESTONE
MODEL 4-A-86

FIRESTONE MODEL 4-A-86

TRADE NAME	Firestone, Model 4-A-86 (Code 334-0-7A96B)
SUPPLIER	Firestone Tire & Rubber Co., Akron, Ohio
TYPE SET	AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver with Loop Ant.
TUBES (EIGHT)	Types 12AT7 FM RF Amp.-Mixer, 6BE6 FM Osc. -AM Conv., 6BA6 1st IF Amp., 6BA6 FM 2nd IF Amp., 6AL5 Ratio DET., 6AV6 DET.-AVC-AF, 6V6GT Power Output, 6X5GT Rectifier
POWER SUPPLY	110-120 Volts AC — RATING .36 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC — FREQ. MOD. 88-108MC

FOR SERVICE INFORMATION ON RECORD CHANGER SEE V-M MODEL 950 IN PHOTOFACT SET 107 FOLDER 13 OR RECORD CHANGER MANUAL CM-3.



FIRESTONE
MODEL 4-A-86

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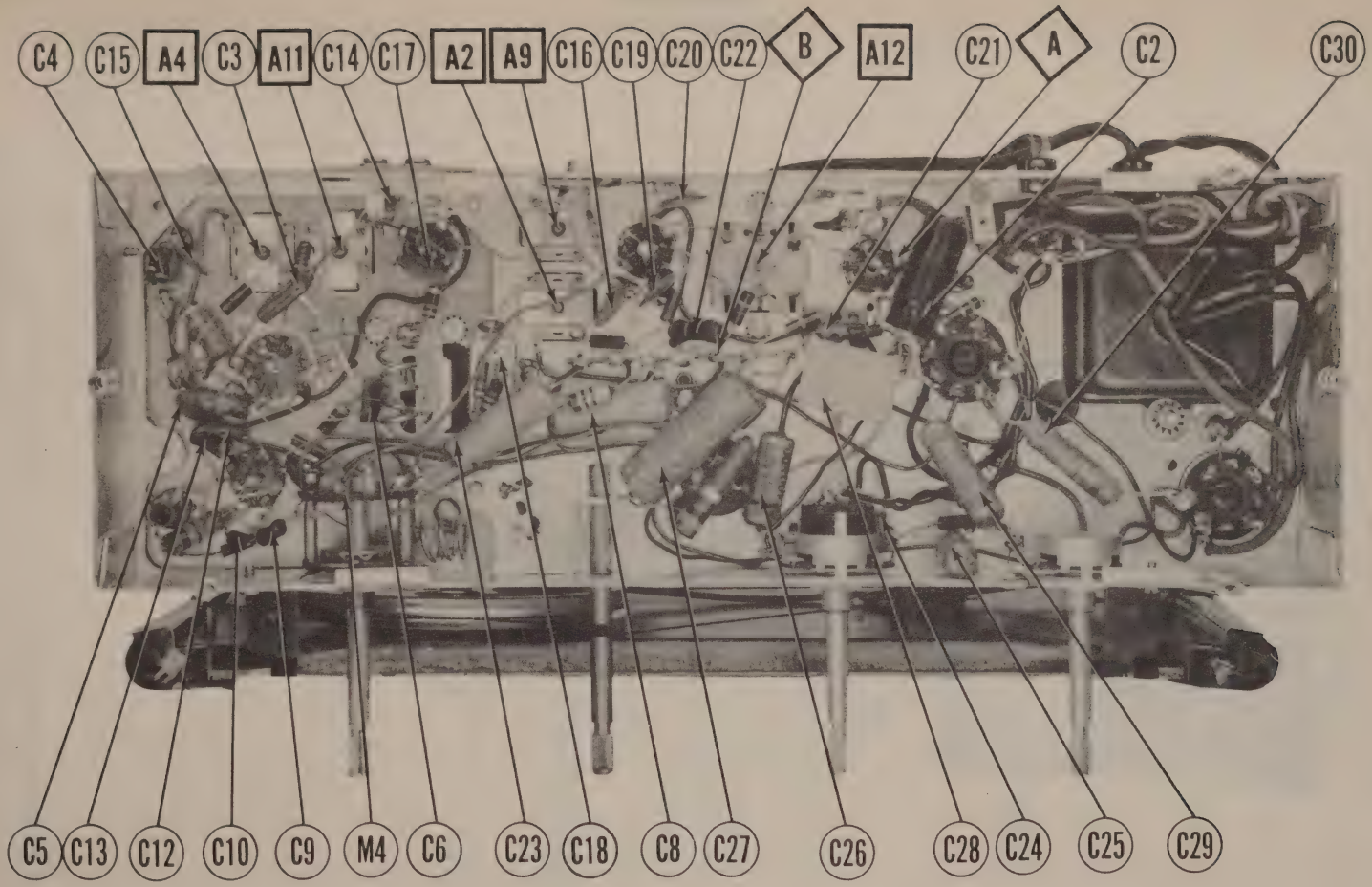
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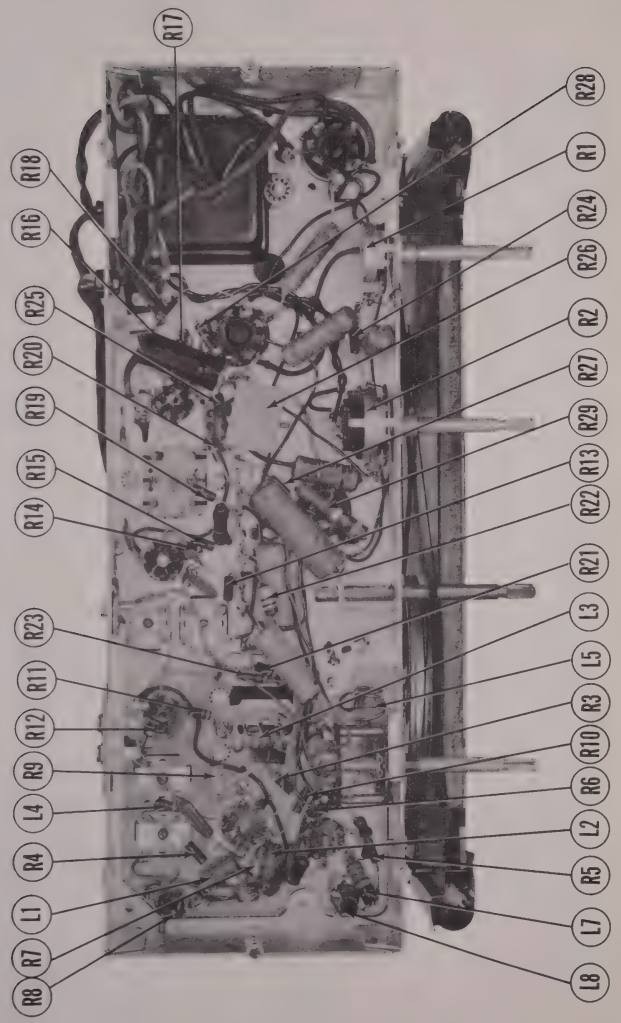

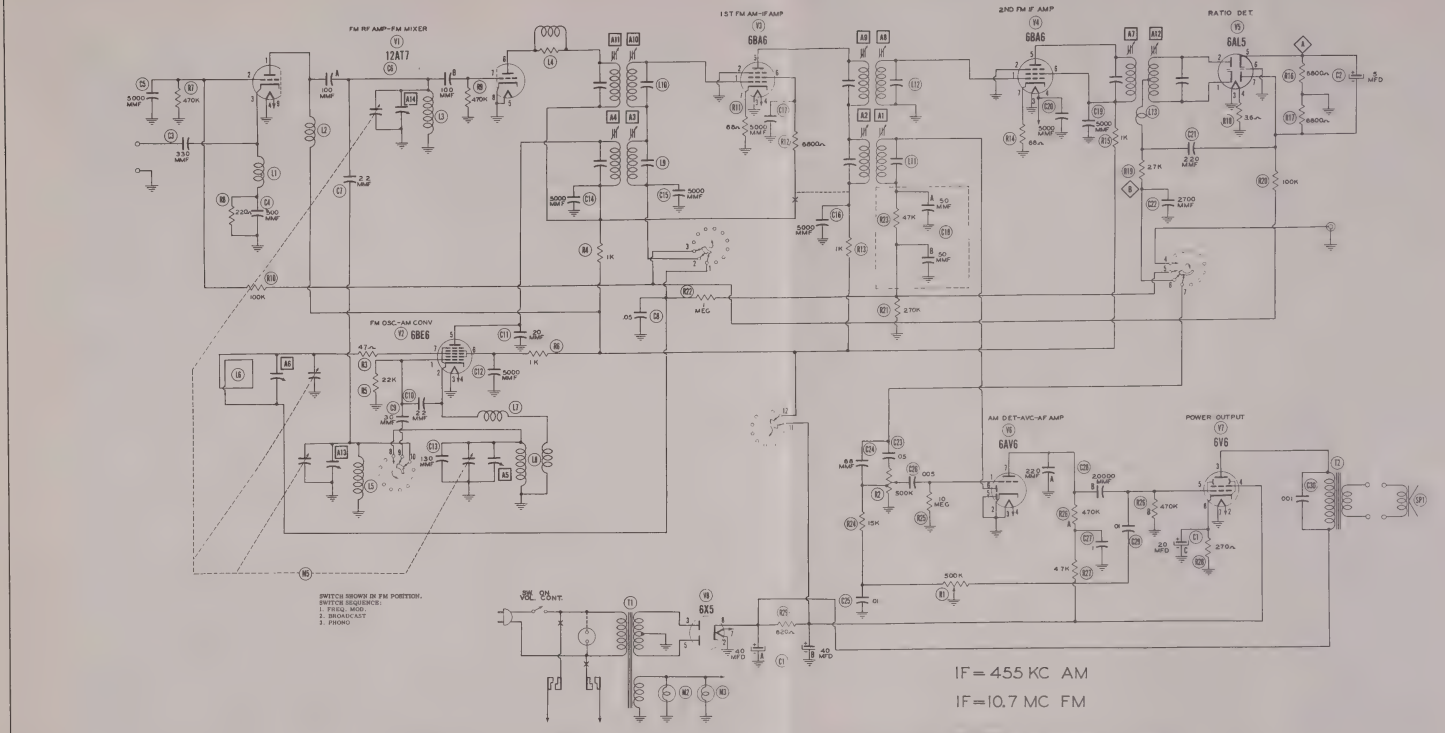

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AT7	0 VDC + 1.4 VDC	6.3 VDC	1 VDC	0 V	0 V	100 VDC	1.1 VDC + .5 VDC	0 V	6.3 VAC
V2	6BE6	0 + 1.4 VDC	0 V	0 V	6.3 VAC	100 VDC	100 VDC + .5 VDC	—	—	—
V3	6BA6	0 + .3 VDC	0 V	0 V	6.3 VAC	95 VDC	80 VDC	1 VDC	—	—
V4	6BA6	0 V	0 V	0 V	6.3 VAC	95 VDC	95 VDC	1 VDC	—	—
V5	6AL5	1 VDC	.1 VDC	0 V	5 VAC	3 VDC	0 V	- .3 VDC	—	—
V6	6AV6	- .6 VDC	0 V	0 V	6.3 VAC	0 V	+ 4 VDC	55 VDC	—	—
V7	6V6GT	0 V	6 3 VAC	140 VDC	110 VDC	0 V	0 V	0 V	5.7 VDC	—
V8	6X5GT	0 V	0 V	280 VAC	0 V	280 VAC	0 V	6.3 VAC	300 VDC	—

‡ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AT7	19200 Ω	40KΩ	320Ω	0Ω	0Ω	11.8KΩ	470KΩ 190KΩ	0Ω	0Ω
V2	6BE6	22KΩ 190Ω‡	2.3Ω	0Ω	1Ω	11.8KΩ	11.8KΩ	41.2MEG	—	—
V3	6BA6	41.2MEG	0Ω	0Ω	1Ω	11.8KΩ	11.8KΩ	68Ω	—	—
V4	6BA6	1Ω	0Ω	0Ω	1Ω	11.8KΩ	11.8KΩ	68Ω	—	—
V5	6AL5	Inf.	Inf.	0Ω	2.5Ω	6.8KΩ	0Ω	6.8KΩ	—	—
V6	6AV6	10MEG	0Ω	0Ω	1Ω	0Ω	330KΩ	1500KΩ	—	—
V7	6V6GT	Inf.	1Ω	1440Ω	1020Ω	470KΩ	1Ω	0Ω	210Ω	—
V8	6X5GT	Inf.	0Ω	170Ω	Inf.	340Ω	Inf.	1Ω	35KΩ	—

† MEASURED FROM PIN 8 OF V8

‡ TAKEN IN FM POSITION
+ TAKEN IN AM POSITION

THE COOPERATION OF THE MANUFACTURER OF THIS
RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (Grid) of 6BA6 (V2) Low side to chassis.	455KC (400% mod)	AM (center)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	"	"	1620KC	"	"	"	A5	"
3.		Loop	1400Kc	"	Tune for max. output.	"	A6	Adjust for maximum output. Set pointer to 1400 on AM scale.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	2500MMF	High side to pin 1 (Grid) of 6BA6 (V3) Low side to chassis	10.7MC (unmod.)	FM (CW)	Tuning gang fully open.	DC probe to point Ⓧ. Common to chassis.	A7, A8 A9	Adjust for maximum deflection.
5.	"	High side to pin 7 (Grid) of 12AT7 (V1) Low side to chassis	"	"	"	"	A10, A11	"
6.	"	"	"	"	"	DC probe to point Ⓧ. Common to chassis.	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4.	2500mmf	High side to pin 1 (Grid) of 6BA6 (V3) Low side to chassis	10.7MC (450KC SWP)	FM (CW)	Point of non-interference	Vert. Amp to point Ⓧ. Low side to chassis.	A7, A8 A9	Disconnect stabilizer capacitor C2. Adjust for maximum amplitude and symmetry as per fig. 1.
5.	"	High side to pin 7 (Grid) of 12AT7 (V1) Low side to chassis	"	"	"	"	A10, A11	"
6.	"	"	"	"	"	Vert. Amp. to point Ⓧ. Low side to chassis.	A12	Reconnect capacitor C2. Adjust A12, so 10.7 MC occurs at center of crossover lines as per fig. 2. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
7.	300Ω	High side thru 300Ω to ungrounded FM ant. terminal. Low side to chassis.	108.5MC (unmod.)	FM	Tuning gang fully open.	DC probe to point Ⓧ. Common to chassis.	A13	Adjust for maximum deflection.
8.	"	"	104.5MC	"	Tune for max. deflection.	"	A14	"

FIG. 1

FIG. 2

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA FIRESTONE PART No.	REPLACEMENT DATA STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF RF Amplifier- FM Mixer	12AT7	12AT7	9A	
V2	FM Oscillator - AM Converter	6BA6	6BA6	7CB	
V3	1st FM-1st IF Amp	6BA6	6BA6	7BK	
V4	2nd IF Amp	6BA6	6BA6	7BK	
V5	Ratio Detector	6AL5	6AL5	6BT	
V6	AF Amplifier-AVC-Amplifier	6AV6	6AV6	7BT	
V7	Power Output	6V6GT	6V6GT	7AC	
V8	Rectifier	6X5GT	6X5GT	4S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	VOLT	REPLACEMENT DATA FIRESTONE PART No.	ARCO/VOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	200	453260	AF8R04D		UP4445C		TVL-4005	▪ Filter
B	20	150							▲ Output Cathode
C	20	25						TVA-1402	Stabilizing Cap.
C2	5	100	453261	PRE350/4	DS-331		GP2E-330	TVA-1403	FM Osc. Grid
C3	510	500	453259	2R100	DD-502		GP2E-510	TVA-1404	FM RF Amp. Cathode
C4	1000		417D507	2R100	DD-501		GP2E-100	10C32	AVC Filter
C5	500		417D508	2R100	DD-102		GP2E-500	10C31	AVC Filter
C5A	1000		417D507	BPD-005	DD-502		GP2E-050	10C11	RF Coupling
C6A	100		417D14	5R100	DS-101		GP2E-100	10C11	Osc. Coupling
B	100				TC-5-25.2				AVC Filter
C7	7.2	200	417D533	P2R8-05	DE-300.2		PTE4S5	2TM-55	Osc. Grid Cap.
C8	30		417D558	5R30	DE-300.2		5W7Q3	10C24	Osc. Plate Cap.
C9	7.2		417D538	5R30	DE-300.2				Fixed Trimmer
C10	7.2		417D538	5R30	DE-300.2		GP2E-20	MB-42	Osc. Anode Bypass
C11	5000		417D207	BPD-005	DD-503		10D5	81L-005	Fixed Trimmer
C12	5000		417D207		DD-503			81L-005	Conv. Plate Dec.
C13	5000		417D207	BPD-005	DD-503		10D5	81L-005	AVC Filter
C14	5000		417D207	BPD-005	DD-503		10D5	81L-005	1st IF Plate Dec.
C15	5000		417D207	BPD-005	DD-503		10D5	81L-005	1st IF Screen
C16	5000		417D207	BPD-005	DD-503		10D5	81L-005	Diode RF Filter
C17	5000		417D207		DD-503		10D5	81L-005	Diode RF Filter
C18	50		417D13	5R30	DE-500		5W7Q5	GP2E-50	2nd IF Dec.
C18A	50			5R30	DE-500		5W7Q5	GP2E-50	2nd IF Dec.
B	5000			BPD-005	DD-503		10D5	81L-005	2nd IF Fil.
C19	5000		417D207	BPD-005	DD-503		10D5	81L-005	2nd IF Cup.
C20	3000	500	417D207	BPD-003	DD-103		10D5	81L-005	De-emphasis
C21	3000		417D495	417D495	DD-103		D5-272	GP2M-0007	IFM-225
C22	2700		417D495	BD1700	DD-102		D5-272	GP2M-0007	IFM-225
C23	100	200	398503	P2R8-05	DF-303		PTE4S5	GP2E-68	2TM-53
C24	100	500	417D511	5R100	DF-303		PTE4S5	GP2E-68	2TM-53
C25	.01	200	B46103	P4R8-01	D4-103		PTE4S1	821-01	4TM-51
C26	.006	600	B46804	P4R8-006	DF-304		PTE4P5	81L-005	4TM-51
C27	.001	600	B46802	P4R8-001	DF-302		PTE4P5		4TM-51
C28A	220				TPC-80		5W7Z5	GP2K-220	HC2A
B	20000						5W7Z5		HC2A
C28	.001	200	B46103	P4R8-01	DS-103		PTE4S1	821-01	4TM-51
C30	.001	800	B46103	P1008-001			PTE4S1		MB-D1

* Some models use .04MFD. in this application. MFG#B3. Part No. B46403.
† Items C28A, C28B, R28A, and R28B are combined into one unit.

CONTROLS

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA FIRESTONE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	400Ω10	†	400Ω10	Q1A-133	AG-80-Z	BSK-40	Tone Control - Taped@ 1000Cy
B	Shaft	†	Not Req.	Not Req.	KSK-3	Not Req.	Attach to R1A per instructions
R2A	500KΩ	†	1KX372	Q1A-133X	AK-30	KTSK-66-S	Volume Control
B	Switch	†	1KX373	Not Req.	AK-3	Not Req.	AF Amp. Plate - see instructions
R3	Switch	2	Not Req.	76-1	8WB	Not Req.	Attach to R3A per instructions

† Items R28A, R28B, C28A, and C28B are combined into one unit

CHASSIS—TOP VIEW

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PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA FIRESTONE PART No.	IRC PART No.	IDENTIFICATION CODES
R1	1000Ω	†	B45102	BTS-1000	Parasitic Suppressor
R2	100Ω	†	B45101	BTS-100	Decoupling
R3	22kΩ	†	B45323		Fm Osc. Grid
R4	47kΩ	†	B45473	BTS-1000	FM RF Amp. Grid
R5	470kΩ	†	B45474		FM RF Amp. Grid
R6	220Ω	†	B45221	BTS-220	FM RF Amp. Cathode
R7	100kΩ	†	B45104		AVC Network
R8	100kΩ	†	B45104	BTS-100K	AVC Network
R9	680Ω	†	B44680	BTS-680Ω	1st IF Amp. Cathode
R10	100kΩ	†	B45104	BTS-100K	AVC Network
R11	680Ω	†	B44680	BTS-680Ω	1st IF Amp. Cathode
R12	100kΩ	†	B45104	BTS-100K	AVC Network
R13	100Ω	†	B45101	BTS-100Ω	1st IF Amp. Decoupling
R14	680Ω	†	B44680	BTS-680Ω	2nd FM IF Amp. Cathode
R15	680Ω	†	B44680	BTS-680Ω	2nd FM IF Amp. Decoupling
R16	680Ω	†	B44682	BTS-680Ω	Ratio DET. Diode Load
R17	150Ω	†	B44152	BTS-150Ω	Ratio DET. Diode Load
R18	680Ω	†	B44682	BTS-680Ω	Ratio DET. Diode Load
R19	27kΩ	†	B45273	BTS-27K	De-emphasis
R20	100kΩ	†	B45104	BTS-100K	AVC Network
R21	100kΩ	†	B45104	BTS-100K	AVC Network
R22	1Meg	†	B45105	BTS-1Meg	AVC Network
R23	47kΩ	†	B45473	BTS-47K	Diode Filter
R24	470kΩ	†	B45474	BTS-470K	Diode Decoupling
R25	10Meg	†	B45106	BTS-10Meg	AF Amp. Grid
R26A	470kΩ	†		BTS-470K	AF Amp. Plate
B	470kΩ	†		BTS-470K	AF Amp. Plate
R27	47kΩ	†	B45473	BTS-47K	AF Amp. Plate Decoupling
R28	270Ω	2	B44271	BTS-270	Output Cathode
R29	270Ω	2	B44271	BTS-270	Bias

† Items R26A, R26B, C28A, and C28B are combined into one unit

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	SEC.-1	SEC.-2	SEC.-3	FIRESTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC	330VCT	5.3VAC		532391	PM8419 ①	P-3048 ①	PR-70 ②
	1.76Amps	90Ma.	3A					

① Also available with 6 volt primary and reduced plate voltage
② Drill new mounting holes

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	SEC.	DC RES. PRI.	SEC.	FIRESTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T2	4.2KΩ	4Ω	95Ω	.05Ω	534184	A-3977 ②	A-3980 ①	BO-8 ①	
	4.2KΩ	8Ω		.1Ω					

① Drill new mounting holes

SPEAKER

ITEM No.	RATINGS			FIRESTONE PART No.	JENSEN PART No.	CO-AX PART No.	INSTALLATION NOTES
	FIELD	V. C.	IMP.				
SP1	PM	2.2Ω		12A480	ST119	10A4A	
SP 2	PM	2.2Ω	10A		Mod-P-10-T		
SP 3	8 3/8"		8 7/8"				

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA FIRESTONE PART No.	NOTES
L1	RF Choke	22Ω		35A8	.47 Microhenry
L2	RF Choke	3Ω		35A8	3.3 Microhenries
L3	FM RF Coil	0Ω		8A2096	
L4	FM Antenna Supp.	0Ω		8A2103	
L5	FM Osc. Coil	0Ω	1.3Ω	8A1473	
L6	FM Osc. Cathode Choke	1.6Ω		8A1148	2.2 Microhenries
L7	1st AM IF	1.6Ω	5.2Ω	35A5	
L8	AM Osc. Coil	1.6Ω	1Ω	8A2065	
L9	1st AM IF	15Ω	1Ω	8A2062	
L10	2nd Am IF	15Ω	1Ω	8A2063	
L11	2nd FM IF	1Ω	1Ω	8A2061	
L12	Ratio DET. Trans.	1.2Ω	.1Ω	8A2064	

PHONO CARTRIDGE and NEEDLE

ITEM No.	FIRESTONE PART No.	REPLACEMENT DATA ASTATIC PART No.	SHURE PART No.	ELECTRO-VOICE PART No.	REMARKS
		CERAMIC	CERAMIC	CERAMIC	
M1		AC-AG-J	A-AG	W28B	33	A66U	0.2 or 0.3

ASTATIC, SHURE, AND ELECTRO-VOICE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

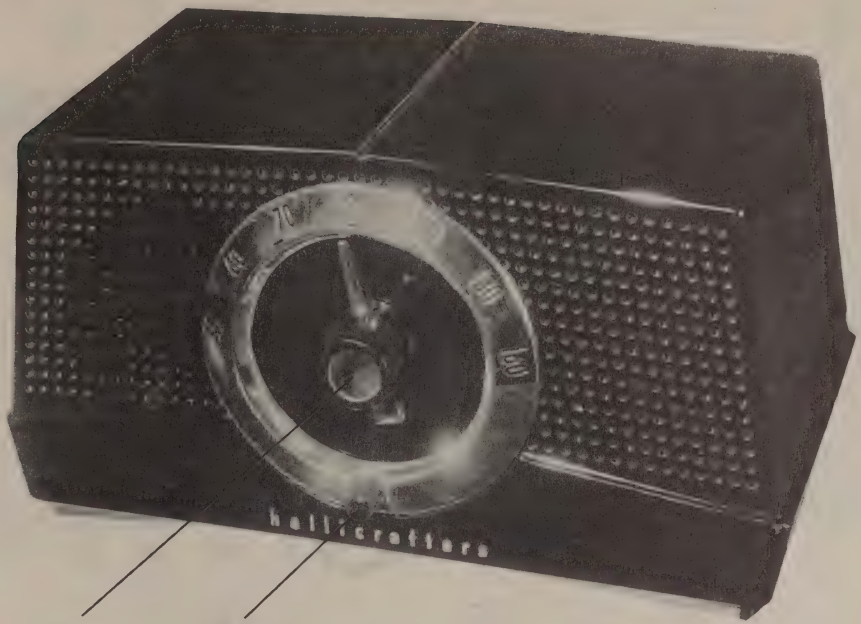
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA FIRESTONE PART No.	NOTES
DL1	Bayonet	6-8	.15	Brown	7A103	Type #47
DL2	Bayonet	6-8	.15	Brown	7A103	Type #47

MISCELLANEOUS

ITEM No.	PART NAME	FIRESTONE PART No.	NOTES
M1	Escutcheon	34A1009	Brown - AM-FM
M2	Switch	14A309	(M-5074AMF, 74-1FMMF)
M3	Tvimmer	17A336	BC Ant. Adj.
A6	Dial Plate	35A231	
	Dial Pointer	35X231	
	Knob	10X759	

HALLICRAFTERS
MODELS 5R11, 5R12, 5R13, 5R14



HALLICRAFTERS
MODELS 5R11, 5R12, 5R13, 5R14

HALLICRAFTERS MODEL 5R14

TRADE NAME	Hallicrafters, Models 5R11, 5R12, 5R13, 5R14,
MANUFACTURER	The Hallicrafters Co., 4401 W. 5th Ave., Chicago, Illinois
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES(FIVE)	Types 12BE6 Converter, 12BA6 IF Amp., 12AV6 or 12AT6 DET.-AVC-AF, 50B5 Power Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-DC RATING .28 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	535-1630KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to stator on rear section of tunning gang. Low side to chassis.	455KC (400% mod)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1625KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1400KC	Tune for max. output.	"	A6	"

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PARTS LIST AND DESCRIPTIONS

HALLICRAFTERS MODEL 5R14

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Hallicrafters PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3A	DET.-AVC-AF	12AV6	12AV6	7BT	
V3B	DET.-AVC-AF	12AT6	12AT6	9A	
V4	Power Output	50B5	50B5	7BZ	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Hallicrafters PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	150	45B183	PRS150/20-40		EDL4215		TVA-2438	Filter Red
B	20	150							Filter Blue
C2	.05	200	46AU503J	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C3A	100		*49A016	8H100	*PC-50	5W5T1	GP1K-100	19C11	Diode RF Filter
B	100			8H100		5W5T1	GP1K-100	19C11	Diode RF Filter
C4	.005	600	46AY502J	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Audio Coupling
C5	250	500	47X20B251K	1468-00025	D6-251	5W5T25	GP2K-250	1FM-325	AF Amp. Plate
C6	.005	600	46AY502J	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Audio Coupling
C7	.005	600	46AY502J	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Output Plate
C8	.1	200	46AU104J	P288-1	DF-104	PTE2P1		72P52	Line Isolation
C9	.05	400	46AW503J	P488-05	DF-503	PTE4S5		4TM-S5	Line Filter
C10	.02	600	46AY203J	P688-02	DF-203	PTE6S2		6TM-S2	Tuning Cap. Isolation

* Items C3A, C3B, and R4 are combined into one unit.

CONTROLS

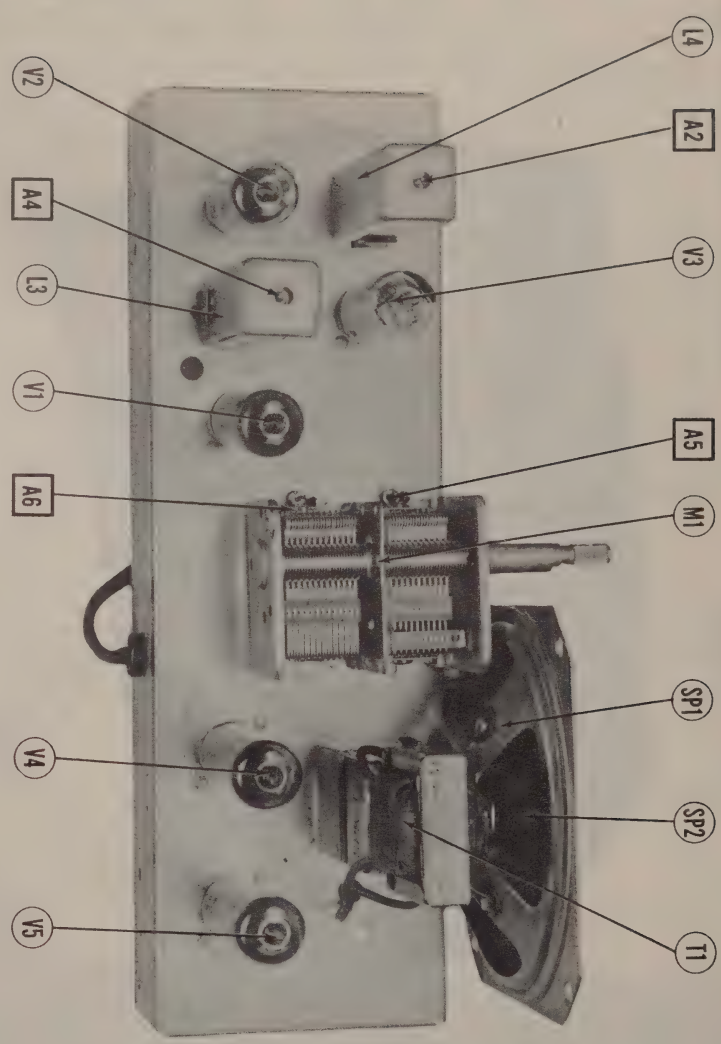
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Hallicrafters PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg	½	25B918	Q13-137	AG-63-Z	BSK-70-S	Volume Control
B	Shaft		Not Req	Not Req	KSS-3	Not Req	Attach to R1A per instructions
C	Switch		Not Req	76-1	SWB	Not Req	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Hallicrafters PART No.	IRC PART No.	IDENTIFICATION CODES
R2	22KΩ	½	23X20X223K		Osc. Grid
R3	390Ω	½	23X20X391K	BTS-390	IF Amp. Cathode
R4	47KΩ	½	49A016 *	BTS-47K	Diode Filter
R5	1Meg	½	23X20X105M	BTS-1Meg	Tone Compensation
R6	10Meg	½	23X20X106M	BTS-10Meg	AF Amp. Grid
R7	470KΩ	½	23X20X474M	BTS-470K	AF Amp. Plate
R8	470KΩ	½	23X20X474M	BTS-470K	Output Grid
R9	120Ω	½	23X20X121K	BTS-120	Output Cathode
R10	10KΩ	1	23X30X103K	BTA-10K	Voltage Divider
R11	1000Ω	1	23X30X102K	BTA-1000	Filter

* Items R4, C3A, and C3B are combined into one unit

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		Hallicrafters PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	1.73KΩ	2.85Ω	149	.41Ω	Part of SP1	A3332 ①	A-3025 ①	RO-2 ①	① Bend mounting tabs down, file out slots & mount on original bracket

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			Hallicrafters PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.		ST113 Mod. P4-X	4A1	
SP1	PM	2.85Ω	85C107			
	CONE DIA.	V. C. DIA.				
SP2	4"	9/16"				

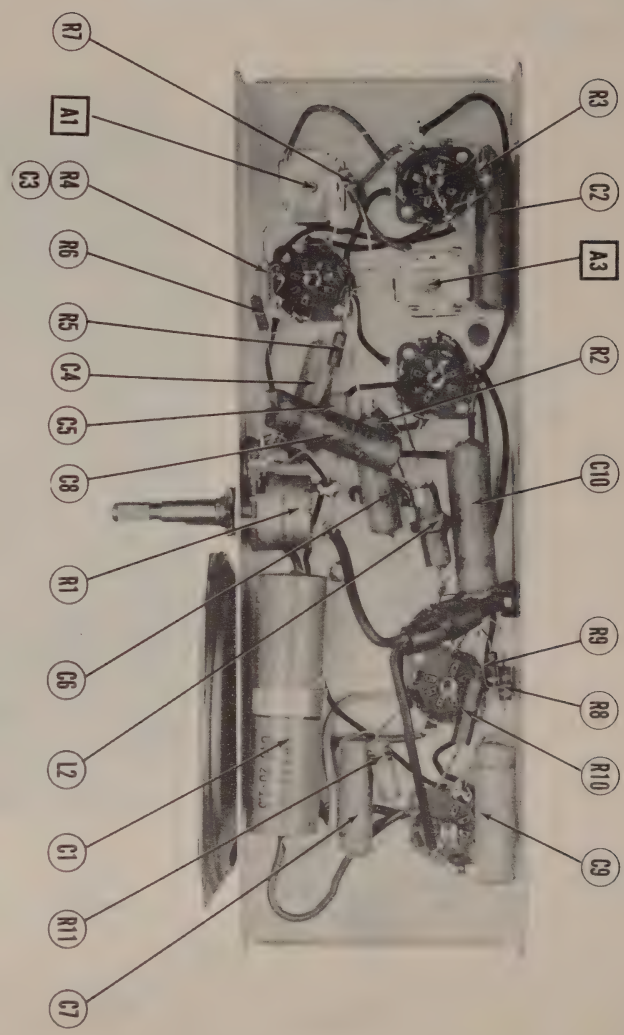
R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	Hallicrafters PART No.	MEISSNER PART No.	
L1	Loop Ant.	.2Ω	3Ω	57C149-B		Includes cabinet back
L2	Osc. Coil	5Ω		51B1300		Tap at .4Ω
L3	1st If	18Ω	25Ω	50B487		
L4	2nd IF	18Ω	25Ω	50B487		

MISCELLANEOUS

ITEM No.	PART NAME	HALLICRAFTERS PART No.	NOTES
M1	2 Gang Var. Cap.	48-284	(22-437MMF, 38-232MMF)
	Cabinet	78F567	Model 5R11
	Cabinet	78F568	Model 5R12
	Cabinet	78F569	Model 5R13
	Cabinet	78F570	Model 5R14

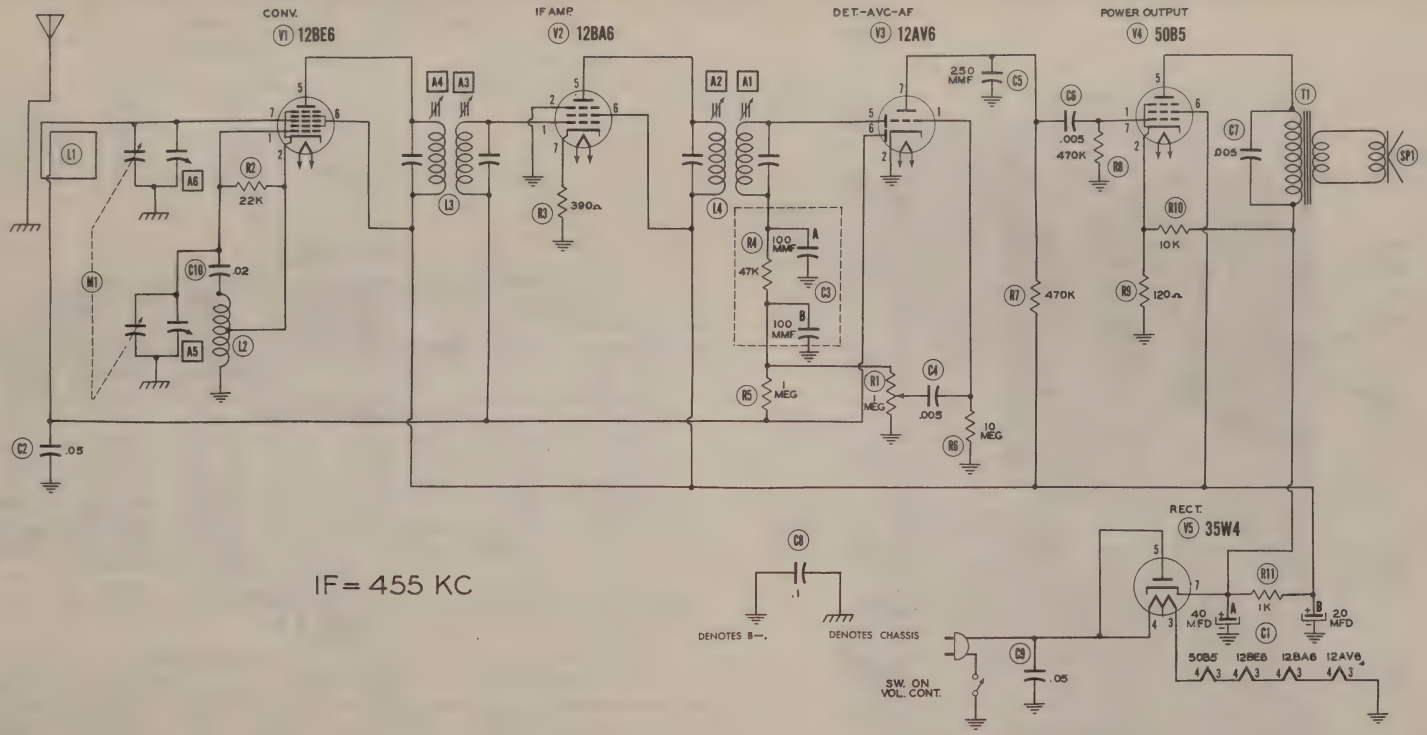
CHASSIS—BOTTOM VIEW



SET 129 FOLDER 7

HALLICRAFTERS MODEL 5R14

HALLICRAFTERS MODEL 5R14



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	8-12VDC	0V	24VAC	35VAC	100VDC	100VDC	-.4VDC
V 2	12BA6	-.5VDC	0V	12VAC	24VAC	100VDC	100VDC	2.6VDC
V 3	12AV6	-.6VDC	0V	0V	12VAC	-.4VDC	-.5VDC	50VDC
V 4	50B5	0V	7.5VDC	35VAC	85VAC	115VDC	100VDC	0V
V 5	35W4	0V	0V	85VAC	117VAC	117VAc	105VAC	120VDC

‡ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.7Ω	25Ω	38Ω	†1KΩ	†1KΩ	2Meg
V 2	12BA6	2Meg	0Ω	13Ω	25Ω	†1KΩ	†1KΩ	390Ω
V 3	12AV6	10Meg	0Ω	0Ω	13Ω	1Meg	2Meg	†470KΩ
V 4	50B5	470KΩ	120Ω	38Ω	90Ω	†150Ω	†1KΩ	470KΩ
V 5	35W4	0Ω	Inf.	90Ω	130Ω	130Ω	120Ω	10K

† MEASURED FROM PIN 7 OF V5

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A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

PACKARD MODEL

2803TV

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PACKARD MODEL
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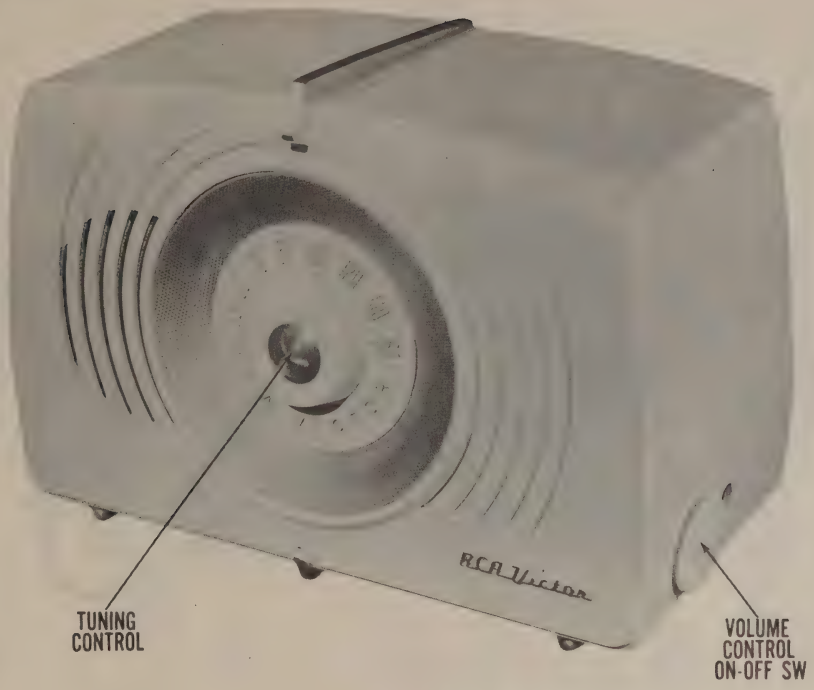
RCA VICTOR MODELS X551, X552 (Ch. RC 1089B, C)



RCA VICTOR MODELS X551, X552 (Ch. RC 1089B, C)

RCA VICTOR MODEL X552

TRADE NAME	RCA Victor, Models X551 (Ch. RC-1089B), X552 (Ch. RC-1089C)
MANUFACTURER	RCA Victor, Div. of Radio Corp. of America, Camden, New Yersey
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 12BE6 Converter, 12BA6 IF Amp., 12AV6 DET.-AVC-AF, 50L6GT Power Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC -DC RATING .26 Amp. @ 117 Volts AC
TUNING RANGE	BROADCAST 540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and B-.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to pin 7 (Grid) of 12BE6 (V1) Low side to B-.	455KC (400% mod)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1400KC	Tune for max. output.	"	A6	"
4.		Loop	600KC	"	"	A7	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. Repeat steps 2, 3, & 4 until no further improvement can be made.

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PARTS LIST AND DESCRIPTIONS

RCA VICTOR
MODEL X552

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: RCA VICTOR PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12BE6	12 BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	DET.-AVC-AF	12AV6	12AV6	7BT	
V4	Power Output	50L6GT	50L6GT	7AC	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: RCA VICTOR PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	150	73500	PRS150/50-30		EDL5315		TVA-2450	Filter Green
B	50	150							Filter Red
C2	.05	400	73553	P488-05	DF-503	PTE4S5		4TM-S5	AVC Filter
C3	68	500	39624	SI68	D6-680	5W5Q7	GP1K-68	19C10	Osc. Grid Cap.
C4	.005	400	73920	P688-005	D6-502	PTE6D5	811-005	6TM-D5	AVC Filter
C5	150	500	39632	1468-00015	D6-151	5W5T15	GP2K-150	1FM-315	Diode RF Filter
C6	.02	200	73562	P488-02	DF-203	PTE4S2		2TM-S2	Audio Coupling
C7	390	500	39642	1468-0004	D6-391	5W5T4	GP2K-390	1FM-34	AF Amp. Plate
C8	.005	200	73920	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Audio Coupling
C9	.03	400	70613	P688-03		PTE6S3		6TM-S3	Output Plate
C10	.05	400	78553	P488-05	DF-503	PTE4S5		4TM-S5	Rect. Plate Bypass
C11	.1	400	73551	P488-1	DF-104	PTE4P1		72P52	Line Isolation

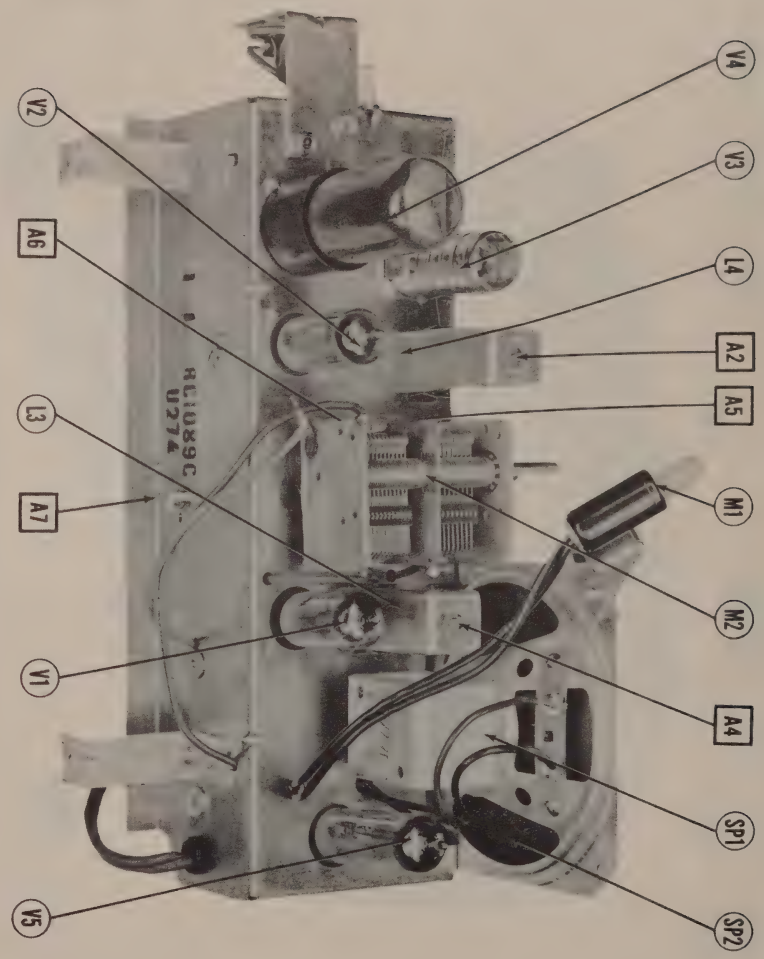
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA VICTOR PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg	½	75483	Q13-137	AG-63-Z	B-70-S	Volume Control
B	Shaft		Not Req	Not Req	FS-3	Not Req	Attach to R1A per instructions
C	Switch		Not Req	76-1	SWB	Not Req	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA VICTOR PART No.	IRC PART No.	IDENTIFICATION CODES
R2	22KΩ	½			Osc. Grid
R3	47Ω	½			Parasitic Suppressor
R4	1Meg	½		BTS-1Meg	AVC Network
R5	100Ω	½		BTS-100	IF Amp. Cathode
R6	47KΩ	½		BTS-47K	Diode Filter
R7	3.3Meg	½		BTS-3.3Meg	AVC Network
R8	4.7Meg	½		BTS-4.7Meg	AF Amp. Grid
R9	220KΩ	½		BTS-220K	AF Amp. Plate
R10	470KΩ	½		BTS-470K	Output Grid
R11	150Ω	½		BTS-150	Output Cathode
R12	1200Ω	1		BTA-1200	Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		RCA VICTOR PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2.6KΩ	3.5Ω	260Ω	.7Ω	75488	A-3330 ①	A-3031 ①	RO-3	① Drill one new mounting hole

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			RCA VICTOR PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.				
SP1	PM	3.5Ω	74165	ST113 Mod P4-X	4A1	
	CONE DIA.	V. C. DIA.				
SP2	4	9/16				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	RCA VICTOR PART No.	MEISSNER PART No.	
L1A	Loop Ant.	3.4Ω		75604		Includes cabinet back model X552
B	Loop Ant.	3.4Ω		75481		Includes cabinet back model X551
L2	Osc. Coil	.7Ω	5.9Ω	75485		
L3	1st IF	13Ω	15Ω	75486		
L4	2nd IF	13Ω	15Ω	75487		

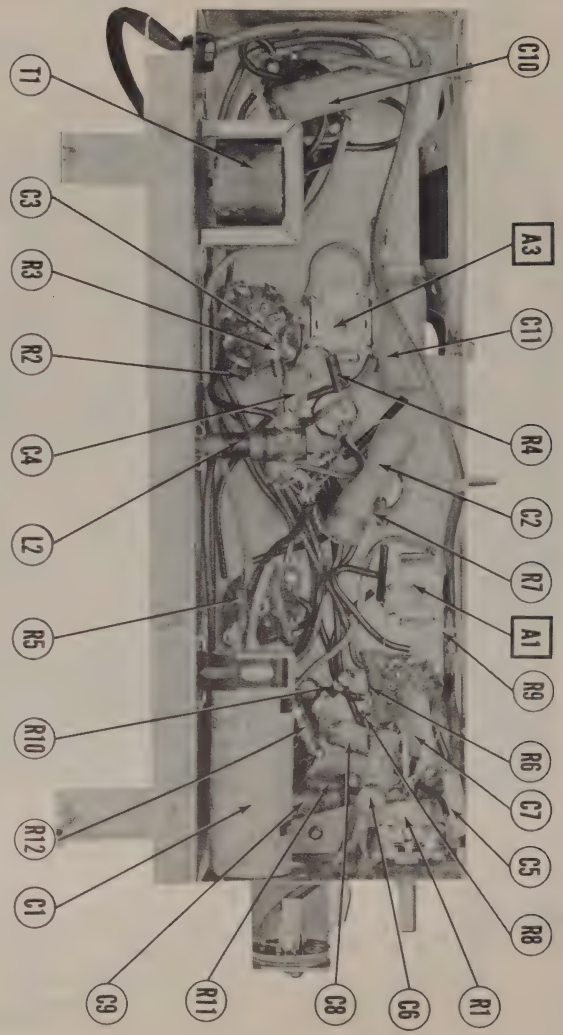
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					RCA VICTOR PART No.		
M1	Bayonet	6-8	.15	Brown	31480		Type #47

MISCELLANEOUS

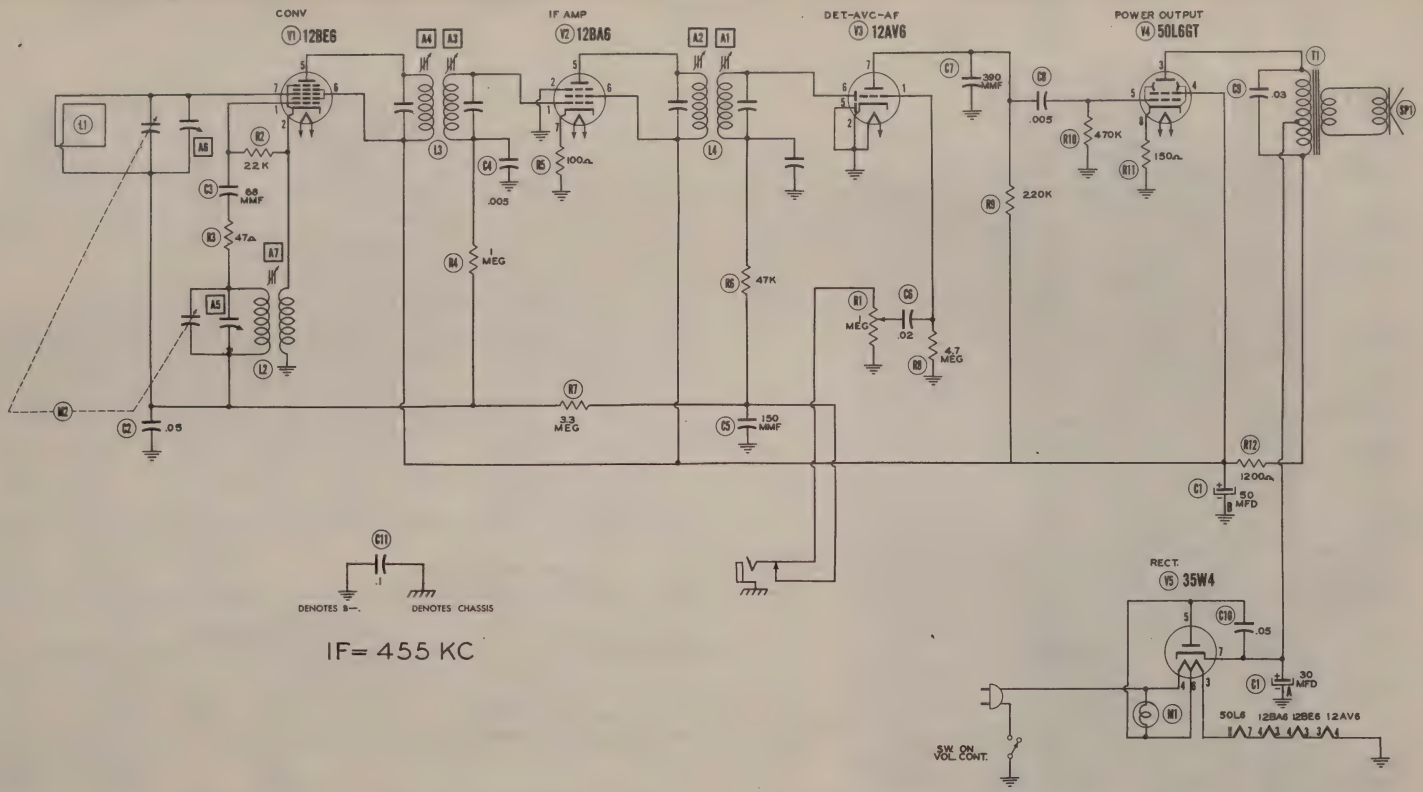
ITEM No.	PART NAME	RCA VICTOR PART No.	NOTES
M2	2Gang Var. Cap.	75484	(22-422MMF, 17-121MMF)
	Cabinet	Y2231	Model X551
	Cabinet	Y2261	Model X552
	Knob	75493	Tuning, Model X551
	Knob	75494	Volume, Model X551
	Knob	75605	Volume, Model X552
	Knob	75606	Tuning, Model X552

CHASSIS—BOTTOM VIEW



RCA VICTOR MODEL X552

RCA VICTOR MODEL X552



IF= 455 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12BE6	a-7.9VDC	0V	12VAC	24VAC	90VDC	90VDC	-.3VDC	
V 2	12BA6	-.2VDC	0V	24VAC	36VAC	90VDC	90VDC	1VDC	
V 3	12AV6	-.6VDC	0V	12VAC	0V	0V	-.5VDC	55VDC	
V 4	50L6GT	100VDC	36VAC	100VDC	90VDC	0V	110VDC	85VAC	6.4VDC
V 5	35W4	0V	0V	85VAC	117VAC	105VAC	105VAC	112VDC	

‡ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12BE6	22KΩ	.7Ω	13Ω	26Ω	†1.2KΩ	†1.2KΩ	4.3Meg	
V 2	12BA6	5.3Meg	0Ω	26Ω	38Ω	†1.2KΩ	†1.2KΩ	100Ω	
V 3	12AV6	4.7Meg	0Ω	13Ω	0Ω	0Ω	1Meg	†220KΩ	
V 4	50L6GT	†245Ω	38Ω	†245Ω	†1.2KΩ	470KΩ	†15Ω	90Ω	180Ω
V 5	35W4	Inf.	Inf.	90Ω	120Ω	115Ω	115Ω	45Ω	

† MEASURED FROM PIN 7 OF V5

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

SENTINEL
MODELS 1U340-C, 340-C

SENTINEL
MODELS 1U340-C, 340-C

SENTINEL MODEL 1U340-C

TRADE NAME	Sentinel Models 1U340-C, 340-C
MANUFACTURER	Sentinel Radio Corp., 2100 W. Dempster, Evanston, Illinois
TYPE SET	AC Operated Combination Phono-Radio, Superheterodyne Receiver with Loop Ant.
TUBES (FIVE)	Types 12BE6 Converter, 12BA6 IF Amp., 12AT6 DET-AVC-AF, 50C5 Power Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC — RATING .24 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	535-1650KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap fully closed and set pointer parallel with base of dial.
Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and B-.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.02MFD.	High side to stator on rear section of tuning gang. Low side to chassis.	455KC (400 ∿ mod)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1650KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1400KC	Tune for max. output.	"	A6	"

RECORD CHANGER---WEBSTER-CHICAGO MODEL 100

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SENTINEL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	DET.-AVC-AF	12AT6	12AT6	7BT	
V4	Power Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SENTINEL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	50	150	25E16	AF1010D		UP5515		TVL-2435	■ Filter
B	50	150							▲ Filter
C2	.05	200	23E216	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C3	.05	400	23E416	P488-05	DF-503	PTE4S5		72P51	Line Isolation †
C4	200	500	23E41	1468-0002	D6-201	5W5T2	GP2K-200	1FM-32	Diode Load Cap.
C5	.05	400	23E416	P488-05	DF-503	PTE4S5		4TM-S5	Phono Isolation
C6	.005	200	23E208	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Audio Coupling
C7	.005	400	23E408	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Tone Comp.
C8A	250		*23E2041-2	81250	*PC-81	5W5T25	GP2K-250	19C13	AF Amp. Plate
B	10000			BPD-01		PTE4S1	821-01	36C1	Audio Coupling
C9	.02	400	23E413	P488-02	DF-203	PTE4S2		4TM-S2	Output Plate
C10	.05	400	23E416	P488-05	DF-503	PTE4S5		4TM-S5	Line Filter

* Items C8A, C8B, R6A, and R6B are combined into one unit.
† Not used in model 340C.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SENTINEL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg	½	28E46	Q13-137	AG-63-Z	BSK-70	Volume Control
B	Shaft		Not Req	Not Req	KSS-3	Not Req	Attach to R1A per instructions
R2A	500KΩ	½	28E41	Q13-133	AG-60-Z	BSK-60	Tone Control
B	Shaft		Not Req	Not Req	KSS-3	Not Req	Attach to R2A per instructions

RESISTORS

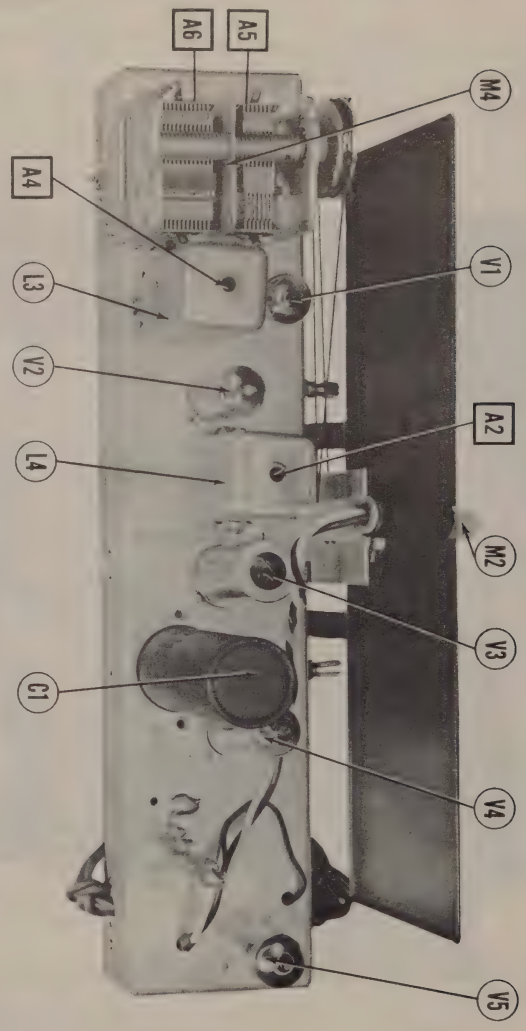
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SENTINEL PART No.	IRC PART No.	IDENTIFICATION CODES
R3	22KΩ	½	27E223-2		Osc. Grid
R4	3.3Meg	½	27E335-2	BTS-3.3Meg	AVC Network
R5	3.3Meg	½	27E335-2	BTS-3.3Meg	AF Amp. Grid
R6A	250KΩ	½	23E2041-2 *	BTS-270K	AF Amp. Plate
R6B	500KΩ	½		BTS-470K	Output Grid
R7	150Ω	½	27E151-2	BTS-150	Output Cathode
R8	2200Ω	1	27E222-3	BTA-2200	Filter
R9	47Ω	½	27E470-2		Surge Limiter
R10	150Ω	½	27E151-2	BTS-150	Pilot Light Shunt

* Items R6A, R6B, C8A, and C8B are combined into one unit

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: SENTINEL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T1	3.3KΩ	3.3Ω	230Ω	1Ω	22E8-2	A-3332①	A-3025 ①	RO-2 ①	① Drill new mounting holes and mount above chassis

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: SENTINEL PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP.				
SP1	PM	3.3Ω	1E34	ST104 Mod P8-S	8A21	
	CONE DIA.	V. C. DIA.				
SP2	7 3/8"	9/16"				

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: SENTINEL PART No.	REPLACEMENT DATA: MEISSNER PART No.
L1	Loop Ant.	.2Ω	2.2Ω	64E21	
L2	Osc. Coil	1Ω	10Ω	20E440	14-1073
L3	1st IF	19Ω	19Ω	20E402	16-6666
L4	2nd IF	19Ω	19Ω	20E402	16-6667

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA: SENTINEL PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	SHURE PART No. CARTRIDGE	SHURE PART No. NEEDLE	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE	REMARKS
M1		CAC-AG-1	Q-AG	W26B	A66U	33	0-2 or S-2	

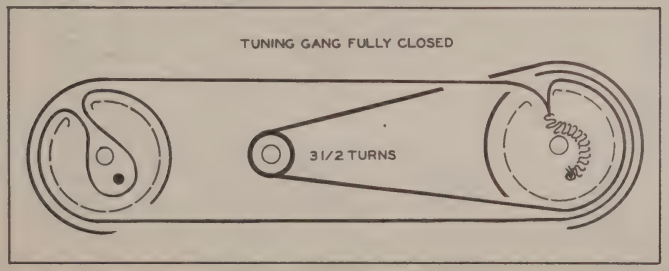
ASTATIC, SHURE AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

DIAL LIGHT

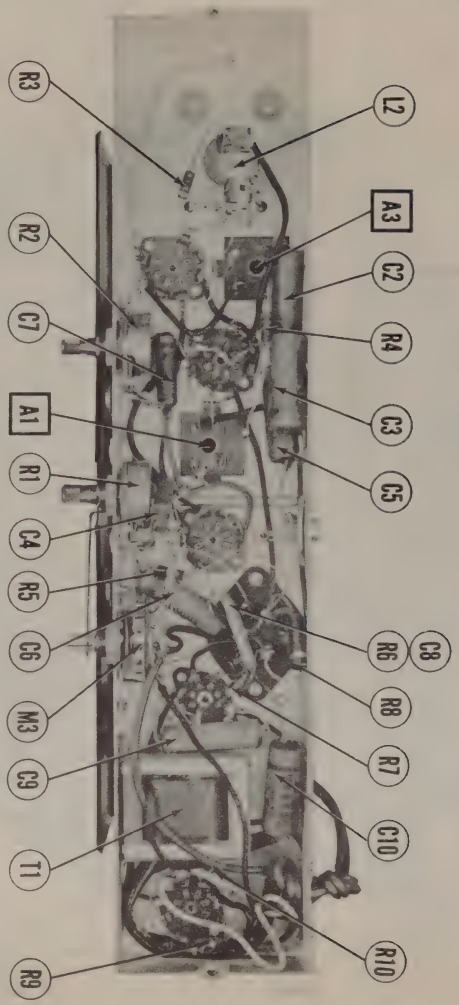
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: SENTINEL PART No.		INSTALLATION NOTES
M2	Bayonet	6-8	.15	Brown	40E1		Type #47

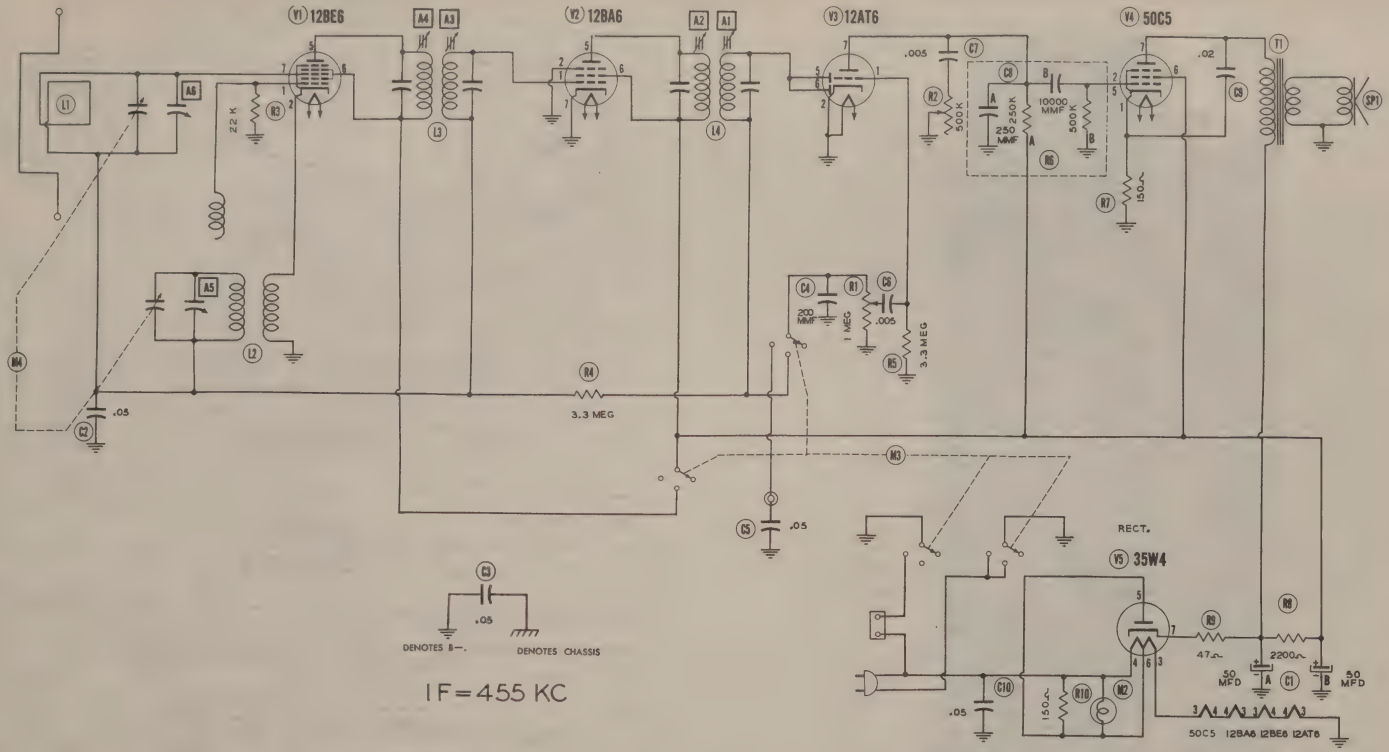
MISCELLANEOUS

ITEM No.	PART NAME	SENTINEL PART No.	NOTES
M3	Switch	29E23	Off-Radio-Phono
M4	2 Gang Var. Cap.	24E47	(27-469MMF, 23-150MMF
	Dial Scale	36E71	
	Dial Pointer	35E25-3	
	Knob	37E53-11	Volume and Tone
	Knob	37E53-12	Off-Radio-Phono
	Knob	37E53-13	Tuning



CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	†-5.2VDC	0V	24VAC	12VAC	70VDC	70VDC	-.5VDC
V 2	12BA6	-.5VDC	0V	24VAC	35VAC	70VDC	70VDC	0V
V 3	12AT6	-.7VDC	0V	0V	12VAC	-.6VDC	-.6VDC	40VDC
V 4	50C5	5.6VDC	0V	83VAC	35VAC	0V	70VDC	98VDC
V 5	35W4	105VDC	0V	83VAC	117VAC	110VAC	110VAC	107VDC

† TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	1Ω	26Ω	13Ω	†2.2KΩ	†2.2KΩ	4.3Meg
V 2	12BA6	4.3Meg	0Ω	26Ω	38Ω	†2.2KΩ	†2.2KΩ	0Ω
V 3	12AT6	3.3Meg	0Ω	0Ω	13Ω	1Meg	1Meg	†250KΩ
V 4	50C5	150Ω	500KΩ	95Ω	38Ω	500KΩ	†2.2KΩ	†280Ω
V 5	35W4	†47Ω	Inf.	95Ω	130Ω	135Ω	135Ω	90K

RADIO-PHONO SWITCH IN RADIO POSITION

† MEASURED FROM PIN 7 OF V5

THE COOPERATION OF THE MANUFACTURER OF THIS
RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

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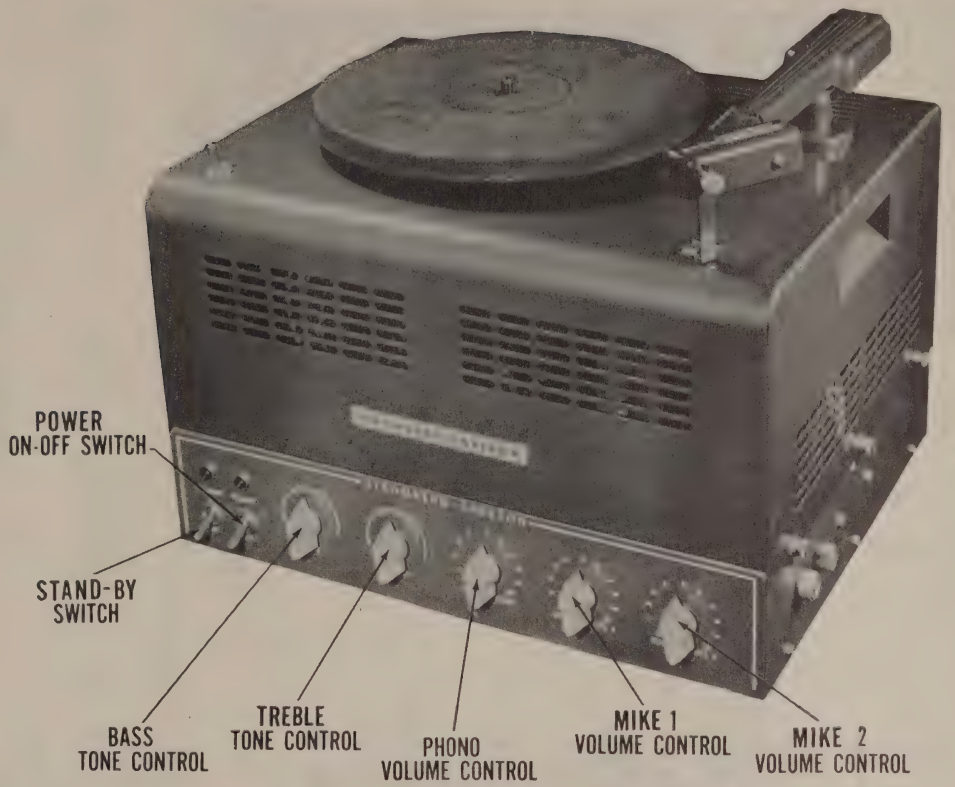
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

STROMBERG-CARLSON
MODEL AM-43



STROMBERG-CARLSON
MODEL AM-43

STROMBERG-CARLSON MODEL AM-43

TRADE NAME	Stromberg-Carlson, Model AM-43
MANUFACTURER	Stromberg-Carlson Co., 100 Carlson Rd., Rochester 3, N.Y.
TYPE SET	AC or Battery Operated Audio Amplifier
TUBES (SEVEN)	Types 6SC7 Mic Preamp., 6SC7 1st AF Amp. - Phono Pre-Amp., 6SJ7 2nd AF Amp., 6N7 Phase Inverter, (2) 6L6G Power Output, 1006 Rectifier
POWER SUPPLY	105-125 Volts AC or 6 Volt Storage Battery RATING 1.12 A @ 117 Volts AC or 12.5A @ 6 Volts DC

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: STROM-CARL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Mic. Pre-Amp	35753	6SC7	8S	
V2	1st AF Amp.-Phase Inv. Pre-Amp.	37653	6SC7	8S	
V3	2nd AF Amp.	162002	6SJ7	8N	
V4	Phase Inv.	41131	6N7	8B	
V5	Power Output	37756	6L6G	7AC	
V6	Power Output	35756	6L6G	7AC	
V7	Rectifier	162065	1006		

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

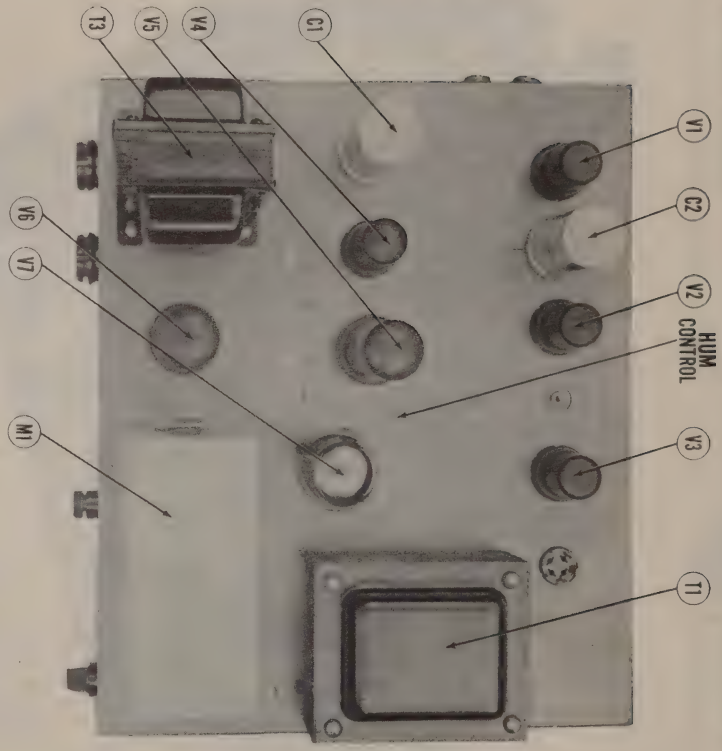
ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: STROM-CARL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	475	111601	AF8X815B		UPT4450		R1036	▪ Filter
B	30	400		• PRS50/50		• BR505			■ Filter
C	50	50							▲ AF Amp.-Phase Inv. Cath. Output Cathode
D	50	50							
C2A	10	350	45754	AF222J5A		UP1135		R1046	▪ Decoupling
B	10	350		PRS6/1500		BRH620			■ Decoupling
C	1400	3							▲ Cathode Bypass
C3	.047	400	110544	P488-047	DF-503	PTE4S5		4TM-S47	Audio Coupling
C4	.047	400	110544	P488-047	DF-503	PTE4S5		4TM-S47	Audio Coupling
C5	.1	400	110546	P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C6	.1	400	110546	P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C7	470	500	110209	1468-0005	D6-470	5W5T5	GP2K-470	1FM-35	Tone Comp.
C8	.001	400	110534	P688-001	D6-102	PTE6D1	GP2L-001	6TM-D1	Tone Comp.
C9	470	500	110209	1468-0005	D6-471	5W5T5	GP2K-470	1FM-35	Tone Comp.
C10	.0047	400	110538	P688-0047	D6-472	PTE6D5	GP2M-0047	6TM-D47	Audio Coupling
C11	.1	400	110546	P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C12	.1	400	110546	P488-1	DF-104	PTE4P1		4TM-P1	Tone Comp.
C13	470	500	110209	1468-0005	D6-471	5W5T5	GP2K-470	1FM-35	Tone Comp.
C14	470	500	110209	1468-0005	D6-471	5W5T5	GP2K-470	1FM-35	Tone Comp.
C15	.001	400	110534	P688-001	D6-102	PTE6D1	GP2L-001	6TM-D1	Tone Comp.
C16	750	500	110215	1468-00075	D6-751	1W5T7	GP2K-750	1FM-375	Tone Comp.
C17	.1	400	110546	P488-1	DF-104	PTE4P1		4TM-P1	2nd AF Amp. Screen
C18	.047	400	110544	P488-047	DF-503	PTE4S5		4TM-S47	Audio Coupling
C19	25	500	24166	1468-00025	D6-250	5W5Q25	GP1K-25	MS-425	AF Feedback
C20	.1	400	110546	P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C21	.1	400	110546	P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C22	.47	200	110533	P288-47		GT2P5		2TM-P47	Hash Filter
C23	1.0	600	110601	630-1.0		DYR-2100		BP-106	Line Filter
C24	2.0	600	110602	630-2.0		DYR-6200		BP-206	Phono Motor Filter

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: STROM PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg	½	145601	Q13-137	AM-63-Z	B-70	Bass Control
B	Shaft		Not Req	Not Req	FS-3	Not Req	Attach to R1A per instructions
R2A	1Meg	½	145601	Q13-137	AM-63-Z	B-70	Treble Control - See Note 1
B	Shaft		Not Req	Not Req	FS-3	Not Req	Attach to R2A per instructions
R3A	1Meg	½	46463	Q11-137	AM-61-S	B-69	Phono Volume Control
B	Shaft		Not Req	Not Req	FS-3	Not Req	Attach to R3A per instructions
R4A	250KΩ	½	45745	Q13-130	AM-64-Z	B-51	Mike 1 Volume Control
B	Shaft		Not Req	Not Req	FS-3	Not Req	Attach to R4A per instructions
R5A	250KΩ	½	45745	Q13-130	AM-64-Z	B-51	Mike 2 Volume Control
B	Shaft		Not Req	Not Req	FS-3	Not Req	Attach to R5A per instructions
R6	100Ω	1	46486	W-100 •	43-100 •	VK-121	Hum Control - Wire Wound

Note 1 Some models use control with part number 145602 in this application
• Fashion shaft to duplicate original

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	STROM-CARL PART No.	IRC PART No.	
R7	2.2Meg	½	28195	BTS-2.2Meg	Mike Pre-Amp Grid
R8	2.2Meg	½	28195	BTS-2.2Meg	Mike Pre-Amp Grid
R9	27KΩ	½	28174	BTS-27K	Mike Pre-Amp Plate
R10	27KΩ	½	28174	BTS-27K	Mike Pre Amp Plate
R11	220KΩ	½	28183	BTS-220K	Isolation
R12	220KΩ	½	28183	BTS-220K	Isolation
R13	56KΩ	½	28178	BTS-56K	Series Phono Input
R14	56KΩ	½	28178	BTS-56K	Series Phono Input
R15	680KΩ	½	28189	BTS-680K	Tone Compensation
R16	1Meg	½	28191	BTS-1Meg	Isolation
R17	100KΩ	½	28006	BTS-100K	Tone Compensation
R18	100KΩ	½	28006	BTS-100K	Tone Compensation
R19	47KΩ	½	28177	BTS-47K	Tone Compensation
R20	27KΩ	½	28174	BTS-27K	Tone Compensation
R21	1Meg	½	28191	BTS-1Meg	Tone Compensation
R22	330KΩ	½	28185	BTS-330K	Tone Compensation
R23	330KΩ	½	28185	BTS-330K	Tone Compensation
R24	100KΩ	½	28006	BTS-100K	Phono Pre-Amp Plate
R25	56KΩ	½	28178	BTS-56K	Isolation
R26	180KΩ	½	28182	BTS-180K	1st AF Amp. Grid
R27	470Ω	½	28154	BTS-470	Cathode
R28	3900Ω	½	28165	BTS-3900	1st AF Amp. Plate
R29	27KΩ	½	28174	BTS-27K	2nd AF Amp. Grid
R30	1Meg	½	28191	BTS-1Meg	2nd AF Amp. Screen
R31	100KΩ	½	28006	BTS-100K	2nd AF Amp. Plate
R32	220KΩ	½	28183	BTS-220K	Isolation
R33	15KΩ	½	28172	BTS-15K	Decoupling
R34	220KΩ	½	28183	BTS-220K	Phase Inverter Grid
R35	1500Ω	½	28160	BTS-1500	Phase Inverter Cathode
R36	100KΩ	½	28006	BTS-100K	Phase Inverter Plate
R37	4700Ω	½	28166	BTS-4700	Phase Inverter Grid
R38	100KΩ	½	28006	BTS-100K	Phase Inverter Plate
R39	10KΩ	½	28170	BTS-10K	Decoupling
R40	100KΩ	½	28006	BTS-100K	Output Grid
R41	200Ω	10	46357	13/4A-200	Output Cathode - Wire Wound
R42	100KΩ	½	28006	BTS-100K	Output Grid
R43	15KΩ	10	46363	13/4A-15K	Voltage Divider - Wire Wound
R44	2500Ω	10	28359	13/4A-2500	Filter - Wire Wound
R45	1.5Meg	½	28193	BTS-1.5Meg	Feedback
R46	250Ω	20	149602	2D-250	Surge Limiter - Wire Wound
R47	10Ω	½	28134	BW-½-10	Series Pilot Light
R48	10Ω	½	28134	BW-½-10	Series Pilot Light

TRANSFORMER (POWER)

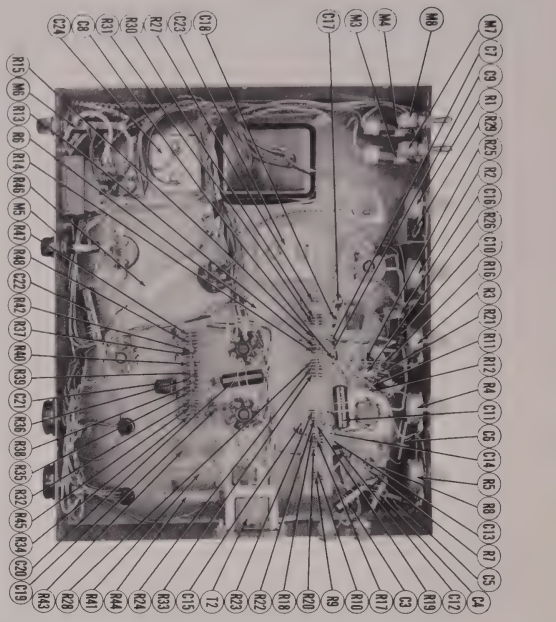
ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	STROM-CARLSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC 1.12A	780VCT .145ADC	1.7VAC ② 2.5A	6.3VAC ③ 3.5A SEC. 4 9VCT 6.25ADC SEC. 5 9VCT 6.25ADC	161603			

(FILAMENT) CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D.C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~c)	STROM-CAR PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
T2	.9A	4Ω	6.5MH	46764		C-3196 ①		

① Drill new mounting holes

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		STROM-CARL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T3	1.35KΩ CT	500Ω Taps @4, 8, 15 & 250Ω	123Ω CT	6.5Ω Taps @.4Ω, .5Ω, .7Ω & 4Ω	46326		A-3019 ①		① Drill new mounting holes

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA				INSTALLATION NOTES
				STROM-CARL PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	RADIART PART No.	
M1	INT	6V	60 cycles	46763		2639	2639	

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA								REMARKS
	STROM-CARL PART No.		ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
			CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M2			B-2 AB-8M†				2360†		† Complete Arm Assembly

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					STROM-CARL PART No.		
M3	Bayonet	6-8	.15	Brown	30933		Type #47
M4	Bayonet	6-8	.15	Brown	30933		Type #47

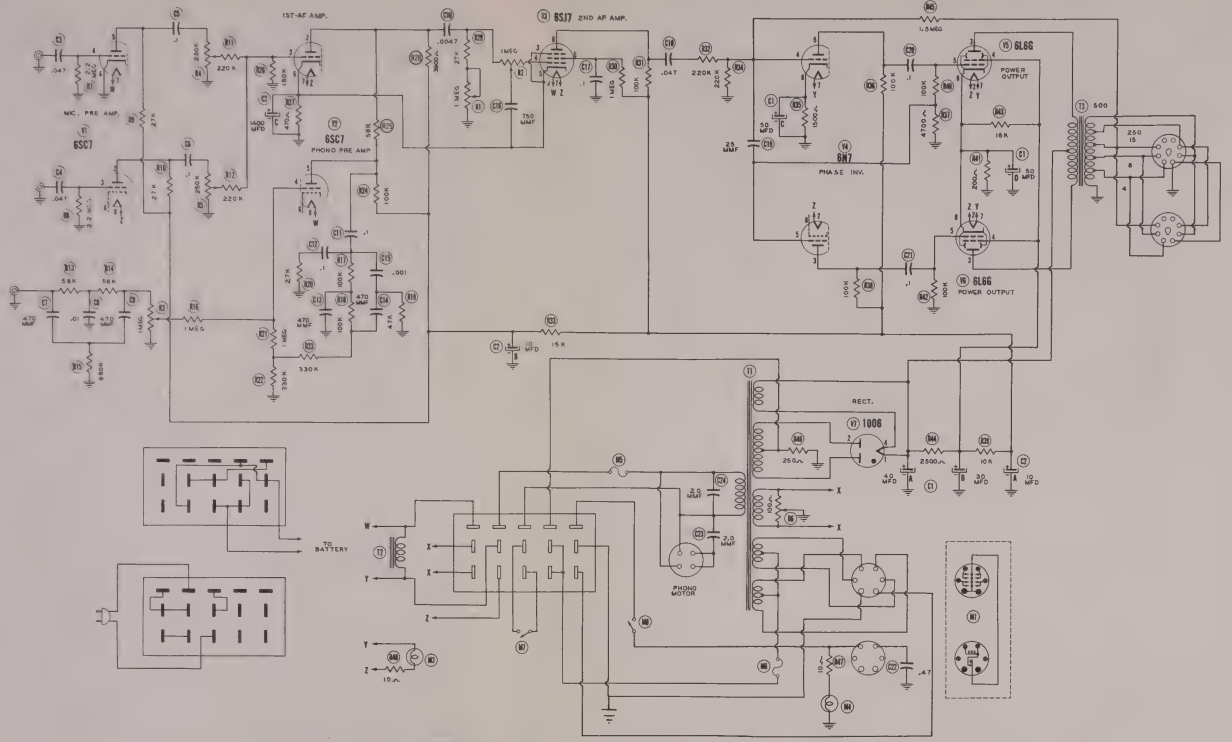
PARTS LIST AND DESCRIPTIONS (Continued)

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			STROMBERG-CARLSON PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M5	3AG	250V	25156	27958	312030	341001	
M6	4AG	32V	128601	128602	413030	442001	

MISCELLANEOUS

ITEM No.	PART NAME	STROM-CARLSON PART No.	NOTES
M7	Switch	36694	On-Off
M8	Switch	36696	Standby



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SC7	0V	135VDC	-.8VDC	-.8VDC	135VDC	0V	†	†
V 2	6SC7	0V	150VDC	0V	0V	135VDC	1.4VDC	†	†
V 3	6SJ7	0V	†	1.4VDC	0V	1.4VDC	255VDC	†	155VDC
V 4	6N7	0V	†	135VDC	0V	0V	12VDC	†	3.4VDC
V 5	6L6	0V	†	400VDC	330VDC	0V	0V	†	22VDC
V 6	6L6	0V	†	400VDC	330VDC	0V	0V	†	22VDC
V 7	1006	400VDC	360VAC	360VAC	400VDC				

† 6.3 VAC MEASURED ACROSS FILAMENTS

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SC7	0Ω	150KΩ	2.2Meg	2.2Meg	150KΩ	0Ω	270	270
V 2	6SC7	0Ω	130KΩ	100KΩ	600KΩ	170KΩ	470Ω	270	270
V 3	6SJ7	0Ω	270	470Ω	1Meg	470Ω	11.1Meg	270	112KΩ
V 4	6N7	0Ω	270	112KΩ	250KΩ	4.7KΩ	112KΩ	270	1.5KΩ
V 5	6L6	0Ω	270	185Ω	12.5KΩ	180KΩ	Inf.	270	300Ω
V 6	6L6	0Ω	270	185Ω	12.5KΩ	185KΩ	Inf.	270	300Ω
V 7	1006	95KΩ	850Ω	850Ω	95KΩ				

† MEASURED FROM PIN 1 OF V7

V & R TAKEN WITH 117VAC POWER SOURCE

THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1 - DC Voltage measurements are at 20,000 ohms per volts; AC Voltages measured at 1000 ohms per volts.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6 - All controls at minimum, proper output load connected.

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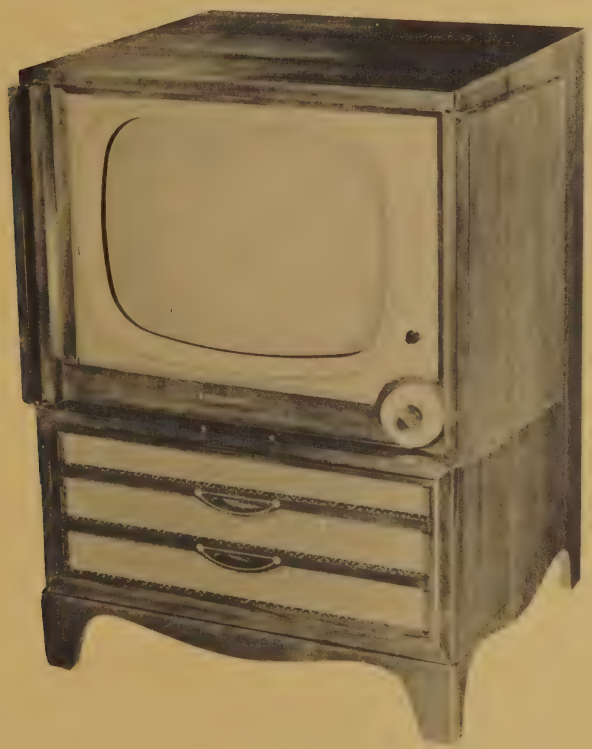

MODEL H-638K20

WESTINGHOUSE MODELS
H-638K20 (CH. V-2178),
H-642K20 (CH. V-2178-1, -3)

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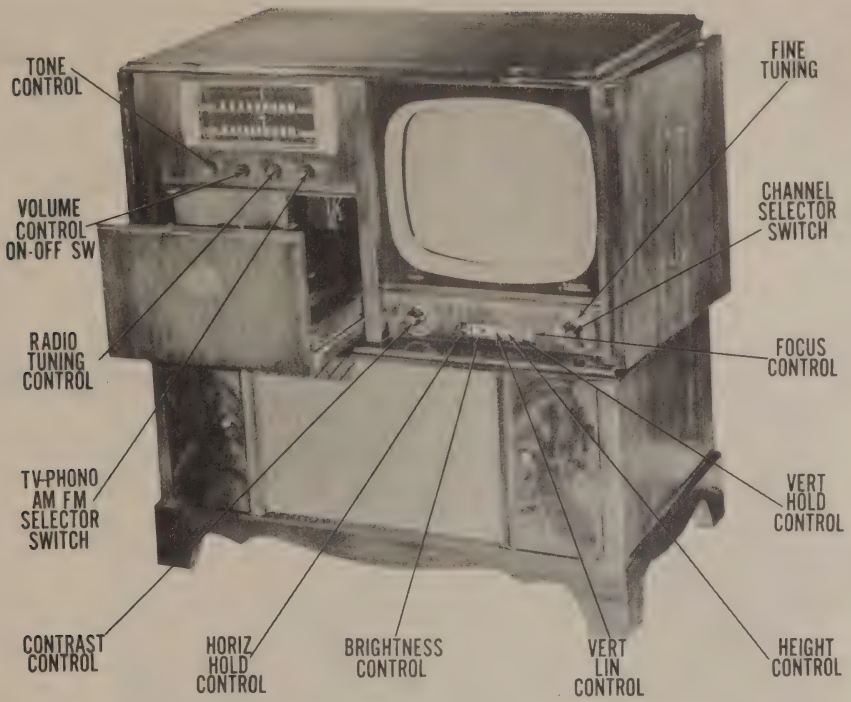

AIRLINE MODEL 05WG-3045A

TRADE NAME	Airline, Models 05WG-3038A, 05WG-3045A	
SUPPLIER	Montgomery Ward and Co., 619 Chicago Ave., Chicago, Illinois	
TYPE SET	TV-AM-FM-Phono Combination Receiver	
TUBES	Thirty One (Model 05WG-3045A) Thirty (Model 05WG-3038A)	
POWER SUPPLY	110-120 Volts AC-60 Cycle	RATING (TV) 2 Amp. @ 117 Volts AC
TUNING RANGE	(TV) Channels 2 thru 13	.575 Amp. @ 117 Volts AC
	(FM) 88-108MC	
	(AM) 540-1600KC	

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RECORD CHANGER UNITS - MODEL 05WG-3038A (VM 407) - SEE PHOTOFACT FOLDER 16-SET 102
MODEL 05WG-3045A (Misc. 700F 33/45) - SEE PHOTOFACT FOLDER 11 - SET 75

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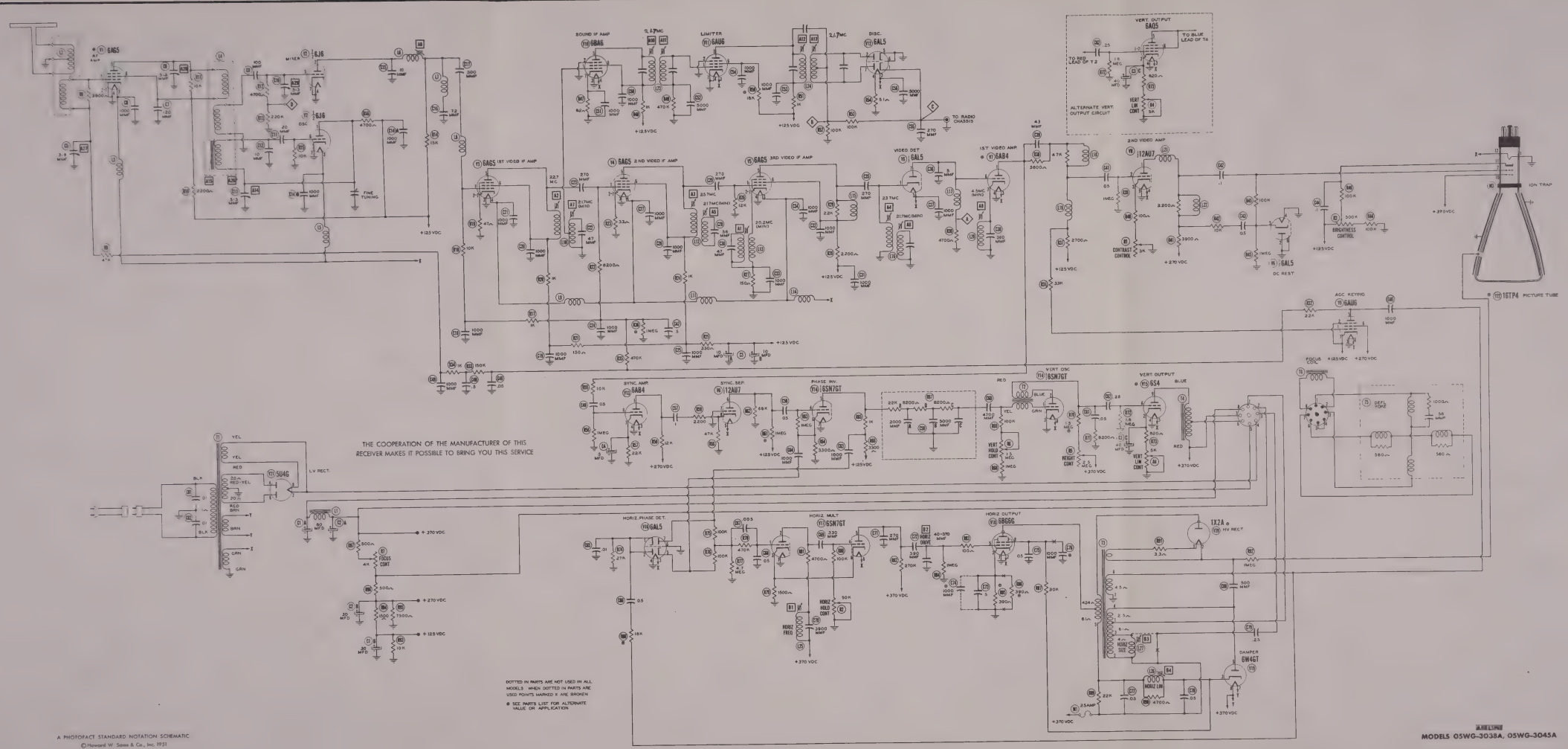
AIRLINE
MODELS 05WG-3038A, 05WG-3045A


THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN
@ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
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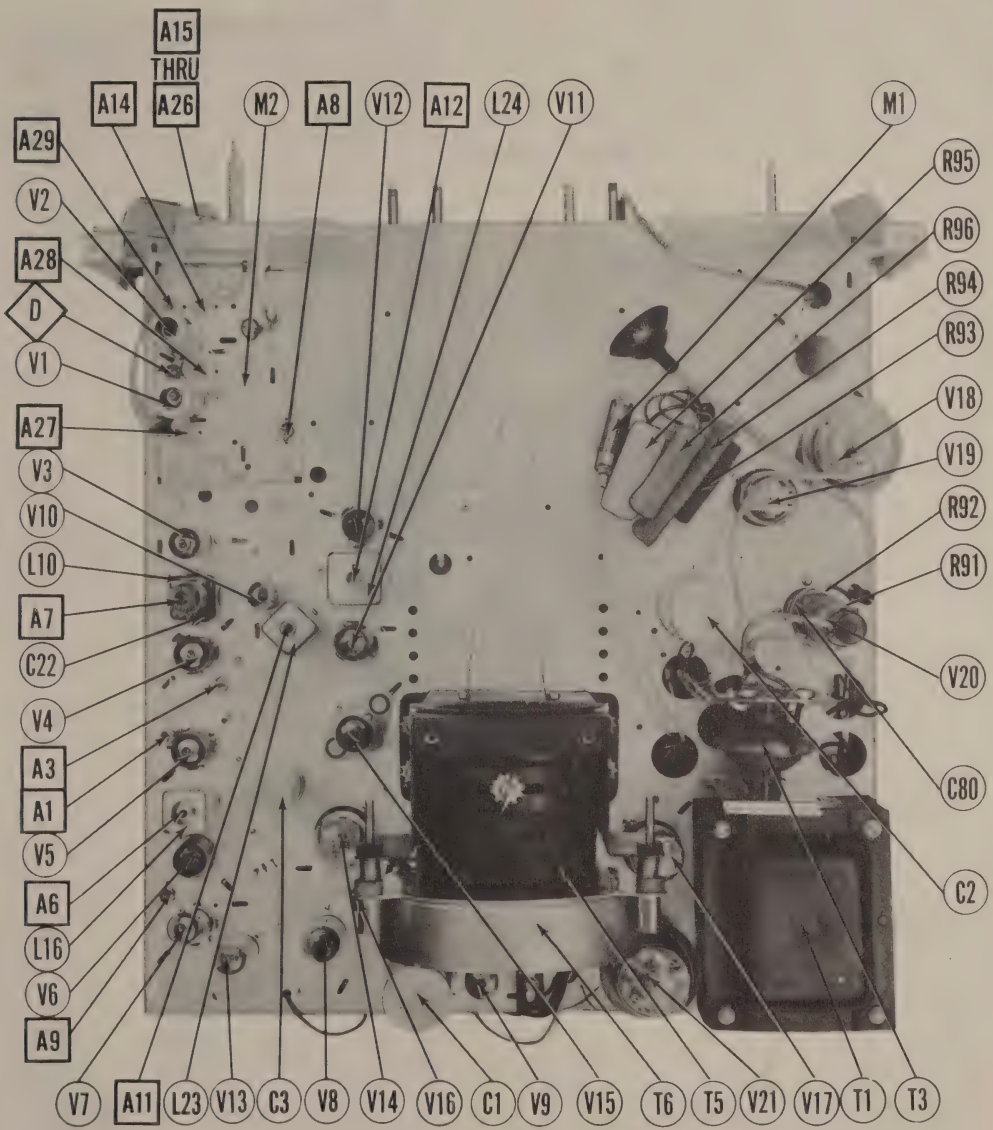
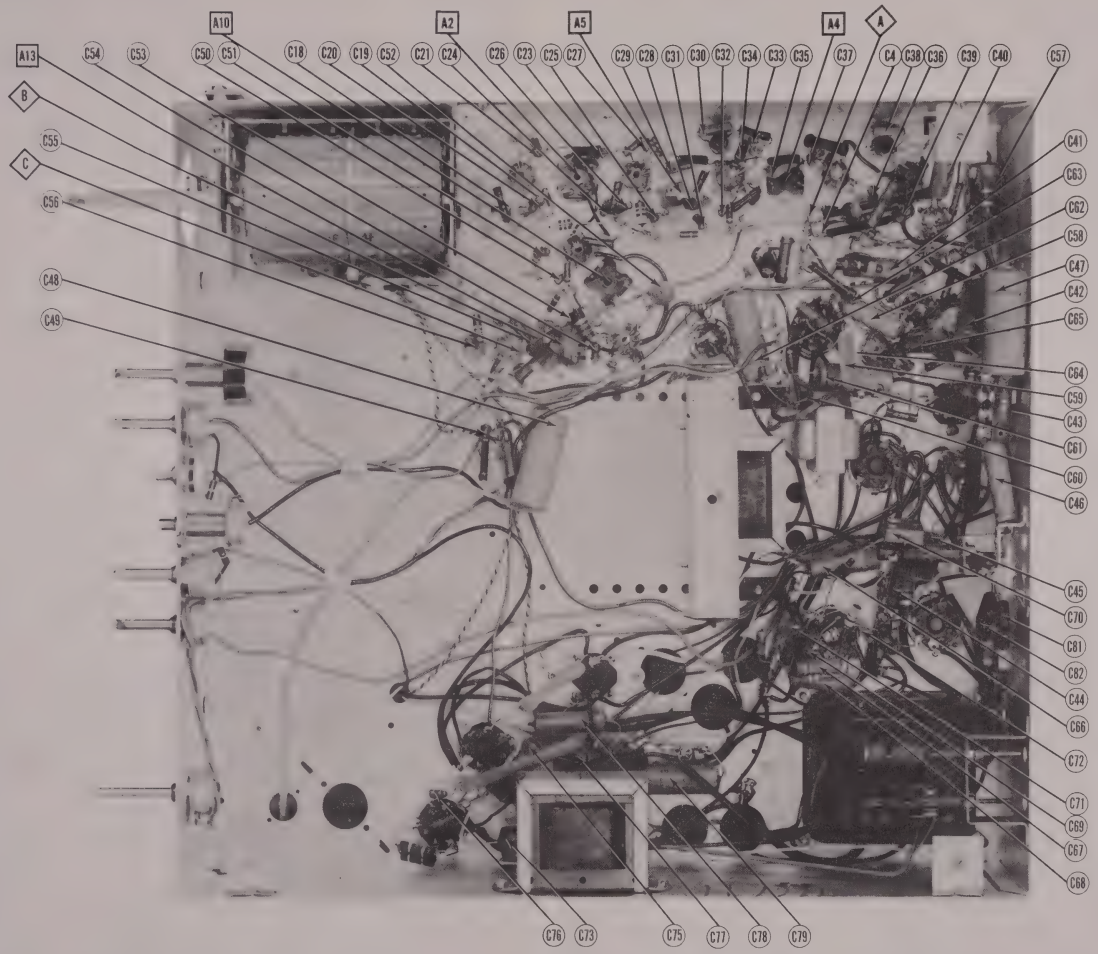
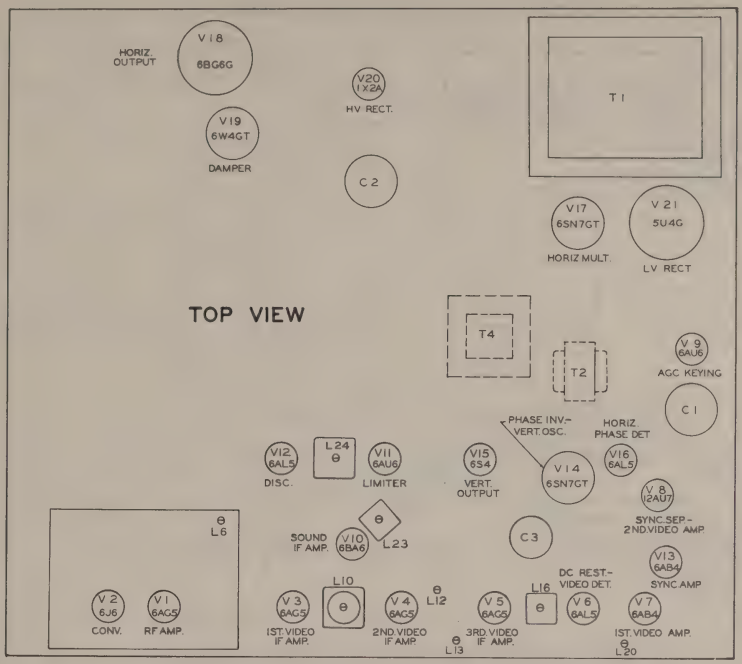
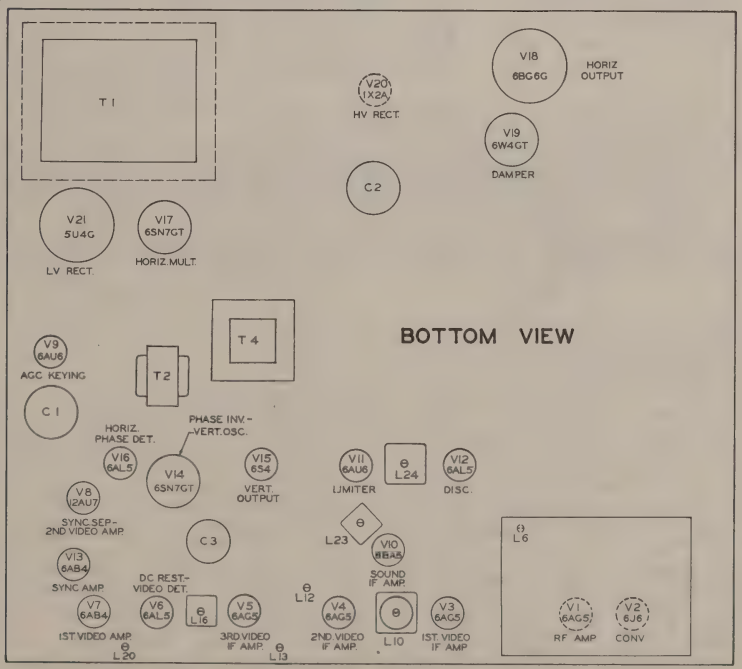


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube (V17) from its socket.

VIDEO IF ALIGNMENT

Remove the converter tube (V2) and replace it with a 6J6 which has pin 1 removed. This will prevent the possibility of erroneous indications caused by the local oscillator.

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	Not used	20.2MC	Any	USE VTVM DC probe to Point (A). Common to chassis.	A1	Adjust for MINIMUM deflection
2.	"	"	"	22.7MC	"	"	A2	Adjust for maximum deflection.
3.	"	"	"	25.7MC	"	"	A3	"
4.	"	"	"	23.7MC	"	"	A4	"
5.	"	"	"	27.7MC	"	"	A5	Adjust for MINIMUM deflection.
6.	"	"	"	21.7MC	"	"	A6, A7	"
7.	"	"	23MC (10MC SWP)	21.7MC 22.4MC 22.6MC 25.25MC 26.2MC	"	Vert. amp. to Point (A). Low side to chassis.	A8	Adjust for response curve similar to figure 1. If necessary retouch A2, A3 and A4 for proper response.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	10KΩ resistor	High side to pin 2 (grid) of 12AT7 (V7). Low side to chassis.	4.5MC (400∿ Mod.)	Any	DC probe to pin 2 of picture tube. Common to chassis.	A9	Adjust for MINIMUM deflection.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
9.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	21.7MC (Unmod.)	Any	DC probe thru 1meg to Point (B) Common to chassis.	A10, A11, A12	Adjust for maximum deflection.
10.	"	"	"	"	DC probe to Point (C). Common to chassis.	A13	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	21.7MC (450KC SWP)	21.7MC	Any	Vert. amp. thru 22KΩ to Point (B). Low side to chassis.	A10, A11, A12	Adjust for maximum amplitude and symmetry as per figure 2.
10.	"	"	"	"	"	Vert. amp. to Point (C). Low side to chassis.	A13	Adjust A13 so 21.7MC occurs at center of crossover lines as per figure 3. SLIGHTLY retouch A12 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 tube in its socket.

Complete oscillator alignment may not be necessary. If the oscillator seems to be off-frequency approximately the same amount for a majority of the channels, it may be possible to correct them in one step using A14. It should be noted that this is an all-channel oscillator adjustment and should not be adjusted for any individual channel. If adjustment of A14 will not bring all channels well within the limits of the fine tuning control, it will be necessary to adjust the channel strip adjustment for each channel that is off-frequency. The channel strip adjustments are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the switch is turned to each channel.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
11.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	215.75MC (Unmod.)	13	DC probe to Point (C). Common to chassis	A15	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
			209.75MC	12		A16	
			203.75MC	11		A17	
			197.75MC	10		A18	
			191.75MC	9		A19	
			185.75MC	8		A20	
			179.75MC	7		A21	
			87.75MC	6		A22	
			81.75MC	5		A23	
			71.75MC	4		A24	
			65.75MC	3		A25	
			59.75MC	2		A26	

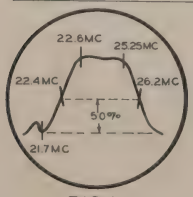


FIG.1

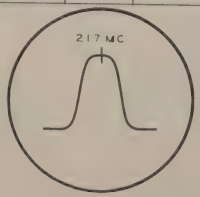


FIG. 2

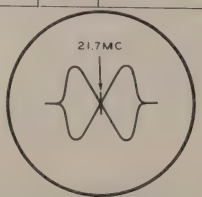


FIG. 3

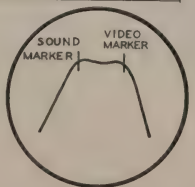


FIG.4

TV ALIGNMENT INSTRUCTIONS (CONT.)

RF ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC SWP)	201.25MC 209.75MC	12	Vert. amp. thru 10KΩ to Point (D). Low side to chassis.	A27, A28, A29	Adjust for response curve similar to fig. 4 with markers above 90%.
13.	"	"	213MC (10MC SWP)	211.25MC 215.75MC	13	"		Check all channels for response similar to figure 4. If markers fall below 70% on any channel, make slight adjustment of A27, A28 and A29 with channel switch set for that channel. Recheck all channels to see that they have not been seriously affected.
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			177MC (10MC SWP)	175.25MC 179.75MC	7			
			85MC (10MC SWP)	83.25MC 87.75MC	6			
			79MC (10MC SWP)	77.25MC 81.75MC	5			
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

RADIO ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap fully closed and set pointer to last reference mark at low frequency end of dial.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
14.	.1MFD	High side to pin 7 (grid) of 6BE6 (V25). Low side to chassis.	455KC (400∿ Mod.)	AM (third pos. CW)	Tuning gang fully open.	Across voice coil.	A30, A31, A32, A33	Adjust for maximum output.
15.		Loop	1620KC	"	"	"	A34	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
16.		"	1400KC	"	Tune for max. output.	"	A35	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
17.	2500MMF	High side to pin 1 (grid) of 6BA6 (V26). Low side to chassis.	10.7MC (Unmod.)	FM (max. CW)	Tuning gang fully open.	DC probe to Point (E). Common to chassis.	A36, A37, A38	Adjust for maximum deflection.
18.	"	High side to pin 6 (grid) of 6AB4 (V24). Low side to chassis.	"	"	"	"	A39, A40	"
19.	"	"	"	"	"	DC probe to Point (F). Common to chassis.	A41	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
17.	2500MMF	High side to pin 1 (grid) of 6BA6 (V26). Low side to chassis.	10.7MC 450KC SWP	FM (max. CW)	Point of non-interference	Vert. amp. to Point (E). Low side to chassis.	A36, A37, A38	Disconnect stabilizer capacitor C84. Adjust for maximum amplitude and symmetry as per figure 5.
18.	"	High side to pin 6 (grid) of 6AB4 (V24). Low side to chassis.	"	"	"	"	A39, A40	"
19.	"	"	"	"	"	Vert. amp. to Point (F) Low side to chassis.	A41	Reconnect capacitor C84. Adjust A41 so 10.7 MC occurs at center of crossover lines as per fig. 6. SLIGHTLY retouch A36 for max. amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
20.	300Ω carbon resistor	High side thru 300Ω to ungrounded FM antenna terminal. Low side to chassis.	108.5MC (Unmod.)	FM	Tuning gang fully open.	DC probe to Point (E). Common to chassis.	A42	Adjust for maximum deflection.
21.	"	"	104.5MC	"	Tune for max. deflection.	"	A43	"

FIG. 5

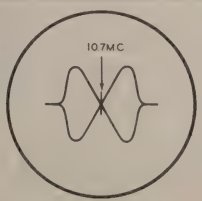


FIG. 6

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	-.5VDC	0V	6.3VAC	0V	105VDC	105VDC	0V		
V 2	6J6	95VDC	85VDC	6.3VAC	0V	-2.3VDC	§-5.8VDC	0V		
V 3	6AG5	-.4VDC	.4VDC	0V	6.3VAC	105VDC	105VDC	.4VDC		
V 4	6AG5	-.4VDC	.3VDC	0V	6.3VAC	105VDC	105VDC	.3VDC		
V 5	6AG5	0V	3VDC	6.3VAC	0V	107VDC	107VDC	1VDC		
V 6	6AL5	0V	0V	6.3VAC	0V	1VDC	0V	-.4VDC		
V 7	6AB4	75VDC	0V	6.3VAC	0V	0V	-.4VDC	0V		
V 8	12AU7	250VDC	0V	13VDC	6.3VAC	6.3VAC	5.5VDC	0V	1.6VDC	0V
V 9	6AU6	105VDC	125VDC	0V	6.3VAC	-.2VDC	270VDC	125VDC		
V 10	6BA6	0V	0V	0V	6.3VAC	105VDC	105VDC	1.2VDC		
V 11	6AU6	-.4VDC	0V	6.3VAC	0V	150VDC	90VDC	0V		
V 12	6AL5	.1VDC	-.8VDC	6.3VAC	1.4VAC	0V	0V	-.8VDC		
V 13	6AB4	260VDC	0V	6.3VAC	0V	0V	0V	9.5VDC		
V 14	6SN7GT	-12VDC -25VDC	145VDC 80VDC	0V	1.2VDC	95VDC	20VDC	0V	6.3VAC	
V 15	6S4	0V	30VDC 15VDC	0V	0V	6.3VAC	0V	0V	0V	390VDC 380VDC
V 16	6AL5	0V	0V	6.3VAC	0V	5VDC	0V	-4VDC		
V 17	6SN7GT	.7VDC	340VDC	13VDC	-6.6VDC -8.3VDC	120VDC	13VDC	0V	¶ 6.3VAC	
V 18	6BG6G	-14VDC	6.3VAC	14VDC	0V	-14VDC	0V	0V	300VDC	TOP CAP •
V 19	6W4GT	0V	340VDC	580VDC	0V	380VDC	0V	¶ 380VDC	¶ 380VDC	
V 20	1X2A	• DO NOT MEASURE								
V 21	†5U4G	0V	390VDC	0V	380VAC	0V	380VAC	120VDC	390VDC	
V 22	†7BP4A	0V	.4VDC	PIN 10 380VDC	PIN 125VDC	11 20VDC	PIN 12 6.3VAC			

FUNCTION SWITCH IN TV POSITION
FOCUS CONTROL COUNTER CLOCKWISE
§ TAKEN WITH VACUUM TUBE VOLTMETER
¶ 6.3VAC MEASURED ACROSS FILAMENT
• DO NOT MEASURE

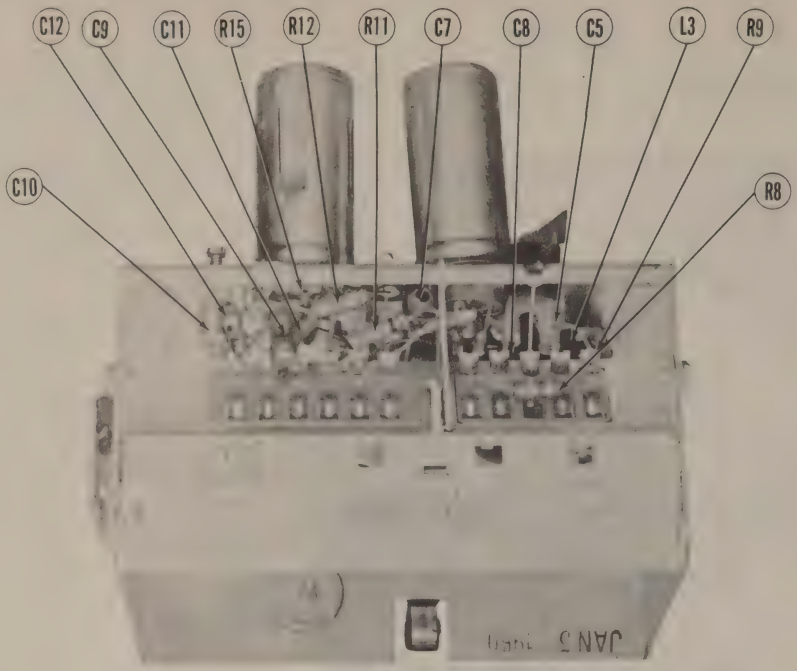
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	1.7Meg	0Ω	.1Ω	0Ω	†4.5KΩ	†4.5KΩ	0Ω		
V 2	6J6	†7KΩ	†18KΩ	.1Ω	0Ω	225KΩ	10KΩ	0Ω		
V 3	6AG5	1Meg	47Ω	0Ω	.1Ω	†3.8KΩ	†3.8KΩ	47Ω		
V 4	6AG5	1Meg	33Ω	0Ω	.1Ω	†3.6KΩ	†3.6KΩ	33Ω		
V 5	6AG5	12KΩ	150Ω	.1Ω	0Ω	†4.5KΩ	†4.5KΩ	150Ω		
V 6	6AL5	.2Ω	0Ω	.1Ω	0Ω	1Meg	0Ω	4.7KΩ		
V 7	6AB4	†11KΩ	Inf.	.1Ω	0Ω	Inf.	4.7KΩ	.3Ω		
V 8	12AU7	†4.9KΩ	1Meg	3.1KΩ	.1Ω	.1Ω	†65KΩ	0Ω	47KΩ	0Ω
V 9	6AU6	†38KΩ	†2.3KΩ	0Ω	.1Ω	1.5Meg	†800Ω	†2.3KΩ		
V 10	6BA6	.1Ω	0Ω	0Ω	.1Ω	†3.3KΩ	†3.3KΩ	82Ω		
V 11	6AU6	470KΩ	0Ω	.1Ω	0Ω	†3.3KΩ	†20KΩ	0Ω		
V 12	6AL5	200KΩ	100KΩ	.1Ω	2.8Ω	0Ω	0Ω	100KΩ		
V 13	6BA4	†13KΩ	Inf.	.1Ω	0Ω	Inf.	1Meg	22KΩ		
V 14	6SN7GT	1.1Meg 2.1Meg	†1.5Meg †4Meg	0Ω	1Meg	†6.6KΩ	3.3KΩ	0Ω	.1Ω	
V 15	6S4	Inf.	5.8KΩ 820Ω	1.8Meg	0Ω	.1Ω	1.8Meg	Inf.	Inf.	†1.3KΩ
V 16	6AL5	27KΩ	27KΩ	.1Ω	0Ω	4.8Meg	Inf.	4.8Meg		
V 17	6SN7GT	5.2Meg	†4.8KΩ	1.5KΩ	100KΩ 150KΩ	†270KΩ	1.5KΩ	0Ω	.1Ω	
V 18	6BG6G	1Meg	.1Ω	190Ω	Inf.	1Meg	Inf.	0Ω	† 50KΩ	TOP CAP †22KΩ
V 19	6W4GT	Inf.	†330Ω	†22KΩ	Inf.	†65Ω	Inf.	†52Ω	†52Ω	
V 20	1X2A	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP †22KΩ
V 21	5U4G	Inf.	5KΩ	Inf.	20Ω	Inf.	20Ω	220KΩ	5KΩ	
V 22	17BP4A	0Ω	1.1Meg	PIN 10 †52Ω	PIN 230KΩ	11 140KΩ	PIN 12 .1Ω			

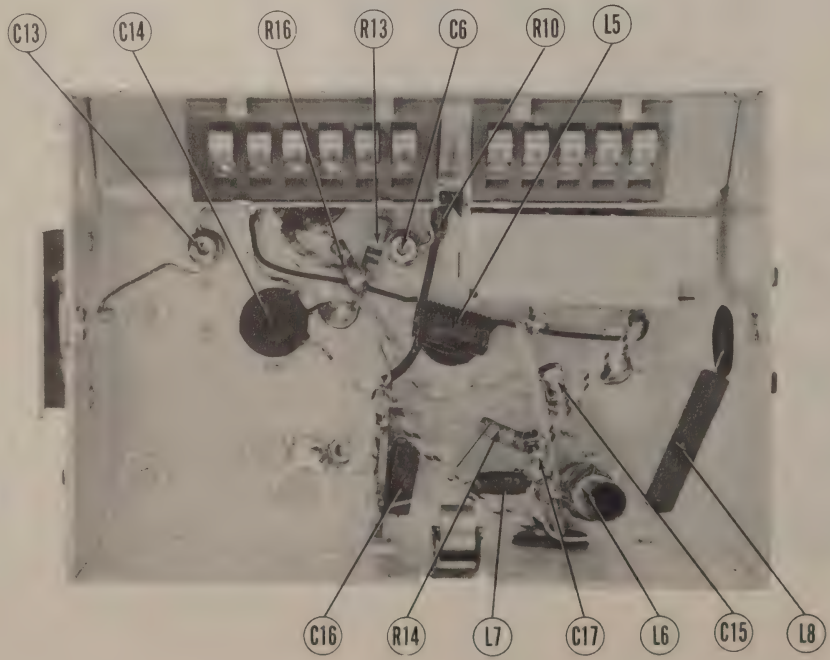
FUNCTION SWITCH IN TV POSITION
FOCUS CONTROL COUNTER CLOCKWISE
† MEASURED FROM PIN 2 OF V21

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED

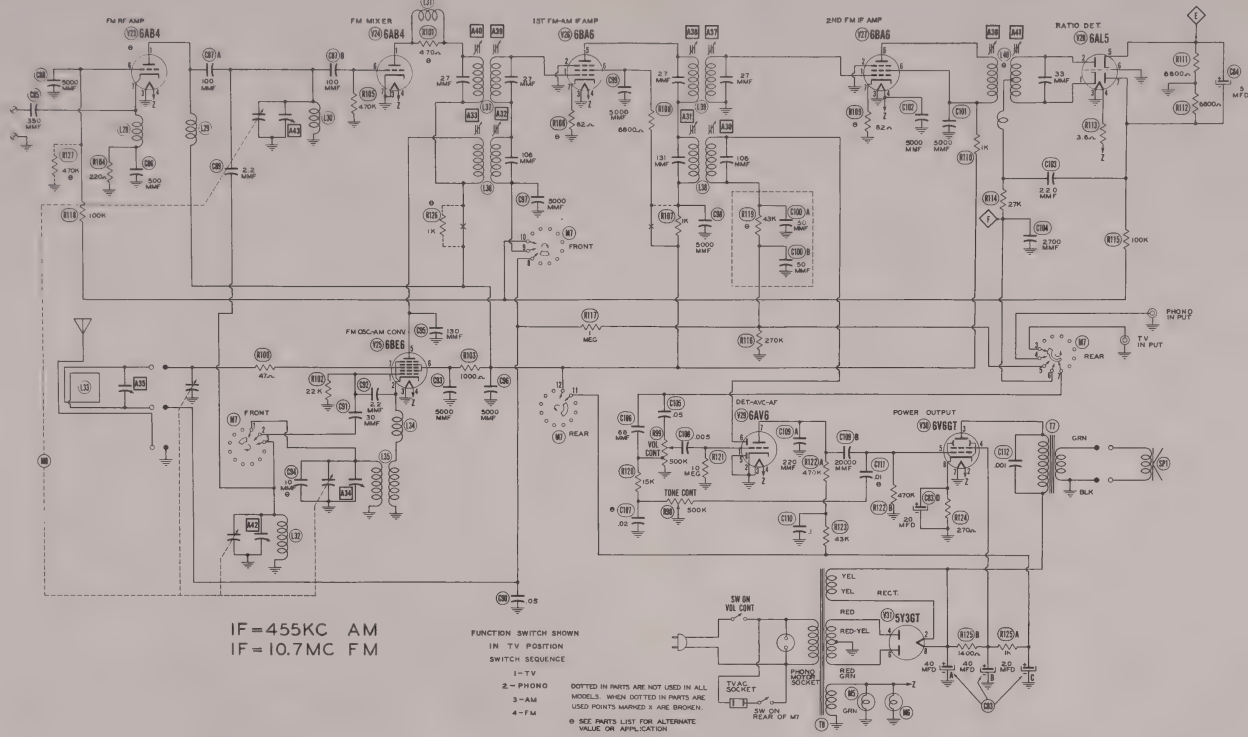
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V23	6AB4	110VDC	0V	0V	6.3VAC	0V	0V	.6VDC	
V24	6AB4	110VDC	0V	0V	6.3VAC	0V	-.6VDC	0V	
V25	6BE6	95-4VDC ⊖ 0	8+-4.6VDC	0V	6.3VAC	105VDC	105VDC	1.1VDC +-.2VDC	
V26	6BA6	+-.2VDC	0V	0V	6.3VAC	100VDC	100VDC	1VDC	
V27	6BA6	0V	0V	0V	6.3VAC	100VDC	100VDC	1.2VDC	
V28	6AL5	1.2VDC	1-.2VDC	0V	6.4VAC	1.6VDC	0V	1-.6VDC	
V29	6AV6	-.4VDC	0V	0V	6.3VAC	0V	-.4VDC	.55VDC	
V30	6V6GT	0V	6.3VAC	235VDC	170VDC	0V	0V	0V	8.7VDC
V31	5Y3GT	0V	250VDC	0V	360VAC	0V	360VAC	0V	250VDC

† TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V23	6AB4	12.4KΩ	0Ω	0Ω	1Ω	Inf.	330KΩ	290Ω	
V24	6AB4	12.4KΩ	0Ω	0Ω	1Ω	Inf.	470KΩ	0Ω	
V25	6BE6	22KΩ 470KΩ	2.2Ω	0Ω	1Ω	12.4KΩ	13.4KΩ	1.33Meg	
V26	6BA6	±1.3Meg	0Ω	0Ω	1Ω	13.4KΩ	19.3KΩ	85Ω	
V27	6BA6	1Ω	0Ω	0Ω	1Ω	13.4KΩ	13.4KΩ	85Ω	
V28	6AL5	Inf.	Inf.	0Ω	1.8Ω	6.5KΩ	0Ω	6.8KΩ	
V29	6AV6	10Meg	0Ω	0Ω	1Ω	0Ω	310KΩ	1520KΩ	
V30	6V6GT	Inf.	1Ω	0Ω	144Ω	11.4KΩ	470KΩ	0Ω	270Ω
V31	5Y3GT	Inf.	85KΩ	Inf.	1000	Inf.	1000	Inf.	85KΩ

FUNCTION SWITCH IN AM OR FM POSITION
† MEASURED FROM PIN 8 OF V 31
† TAKEN IN FM POSITION
+ TAKEN IN AM POSITION

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

AIRLINE
MODELS 05WG-3038A, 05WG-3045A

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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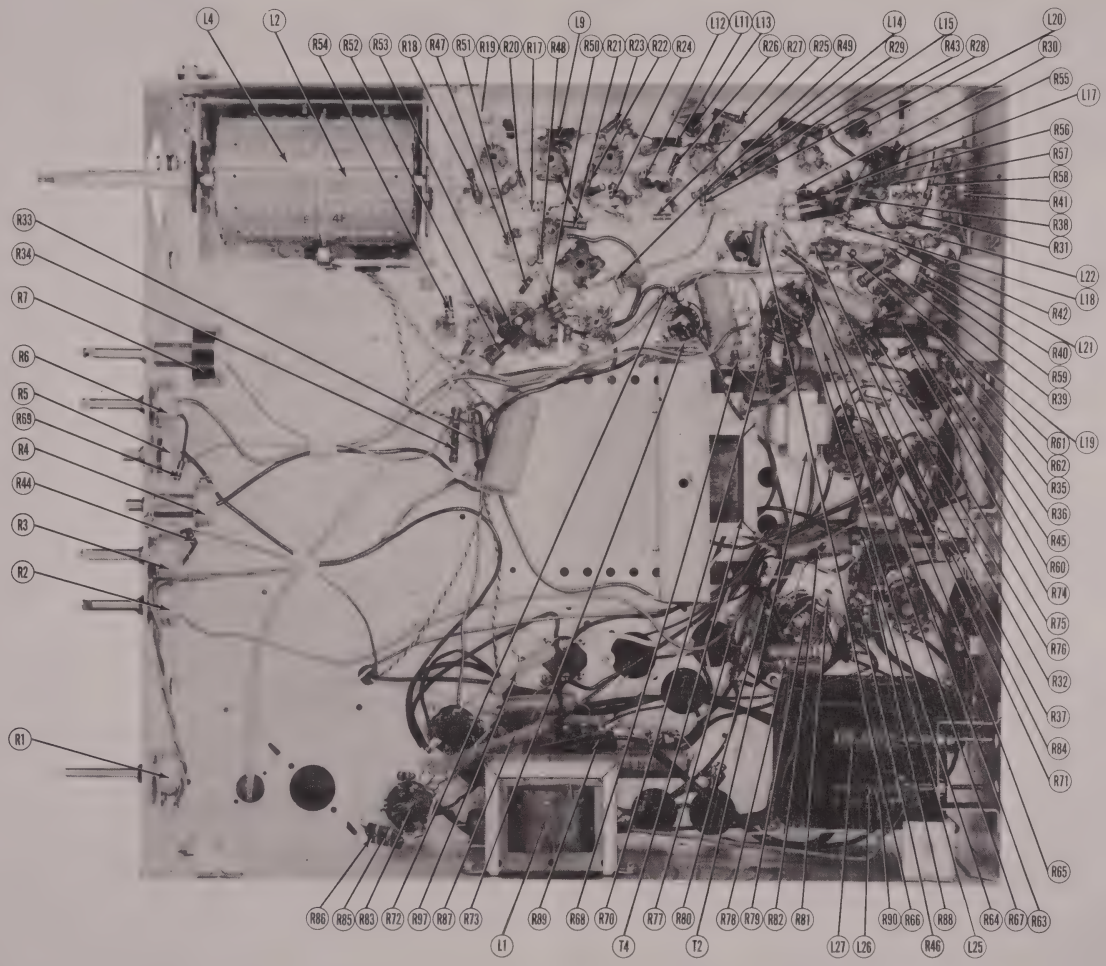
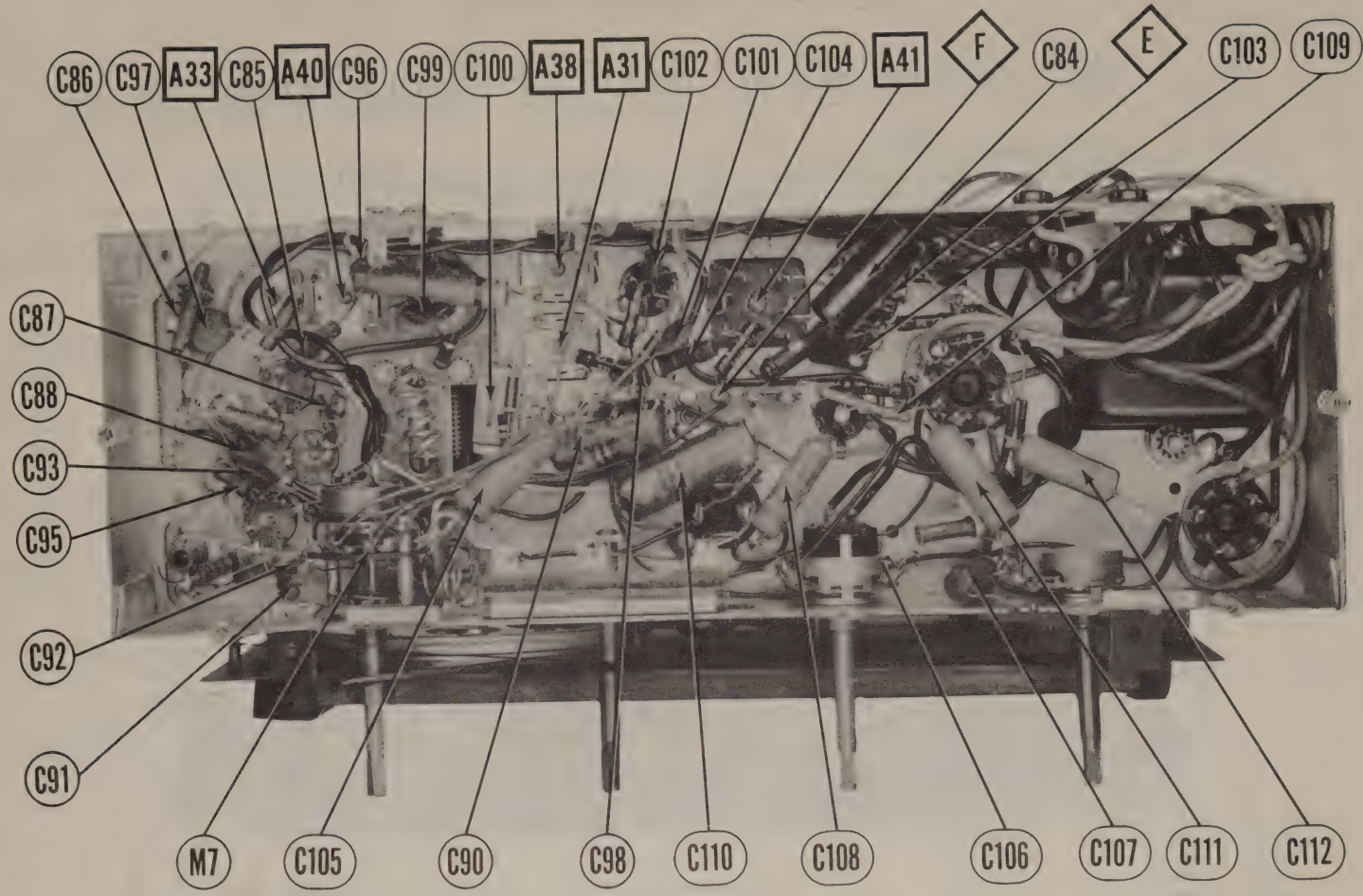
RADIO SCHEMATIC

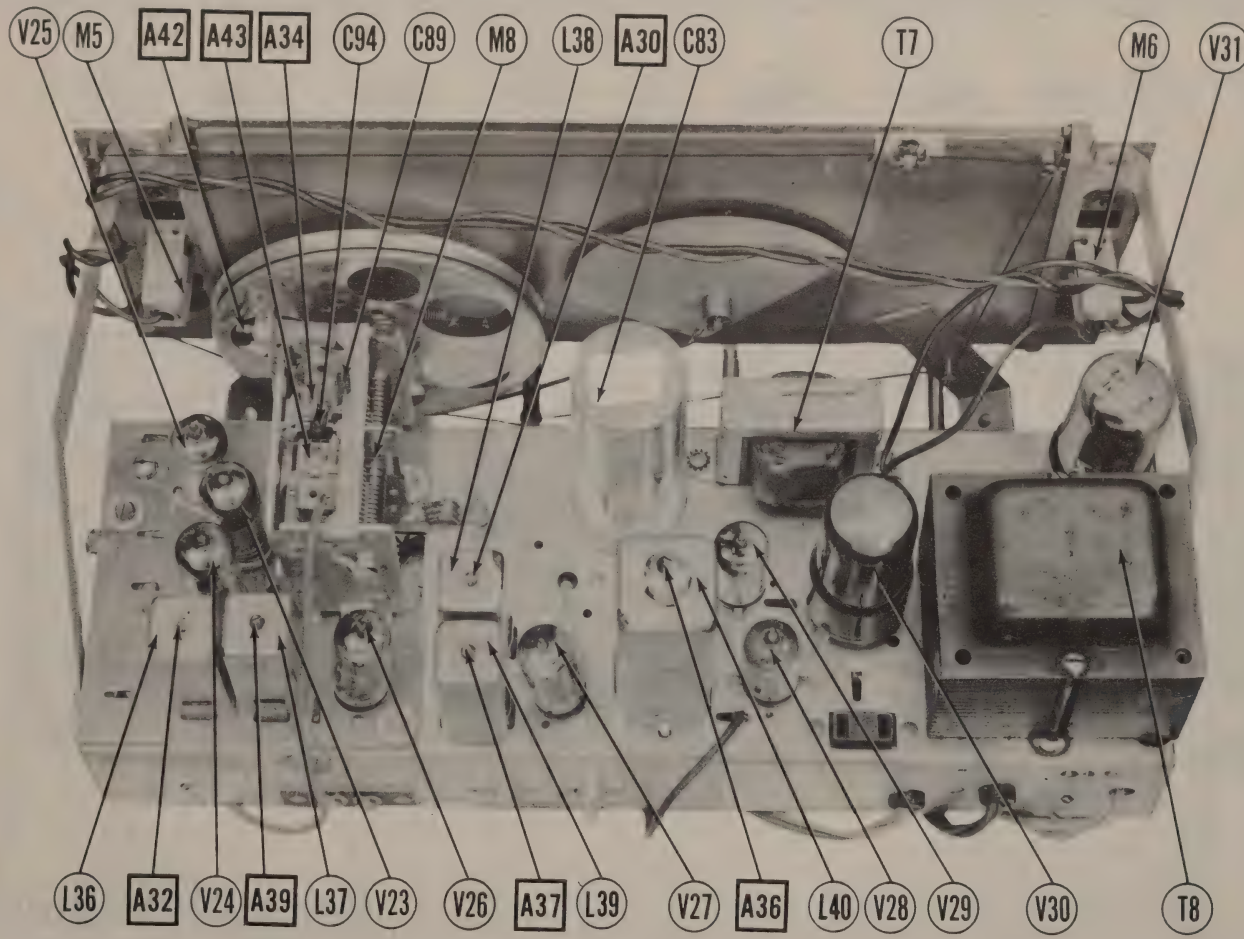
AIRLINE
MODELS 05WG-3038A, 05WG-3045A



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



RADIO CHASSIS BOTTOM VIEW - CAPACITOR AND ALIGNMENT IDENTIFICATION



RADIO CHASSIS-TOP VIEW

TV PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		AIRLINE PART No.	STANDARD REPLACEMENT		
V1A	RF Amplifier	6AG5	6AG5	7BD	
B	RF Amplifier	6BC5	6BC5	7BD	
C	RF Amplifier	6CB6	6CB6	7BM	
V2	Converter	6J6	6J6	7BF	
V3	1st Video IF Amp.	6AG5	6AG5	7BD	
V4	2nd Video IF Amp.	6AG5	6AG5	7BD	
V5	3rd Video IF Amp.	6AG5	6AG5	7BD	
V6	Video Detector - DC Restorer	6AL5	6AL5	6BT	
V7A	1st Video Amp.	6BA4	6BA4	5CE	
B	1st Video Amp. - 1st Sync. Amp.	12AT7	12AT7	9A	Used as alternate
V8	2nd Video Amp. - Sync. Separator	12AU7	12AU7	9A	
V9	AGC Keying	6AU6	6AU6	7BK	
V10	1st Sound IF Amp.	6BA6	6BA6	7BK	
V11	Limiter	6AU6	6AU6	7BK	
V12	Discriminator	6AL5	6AL5	6BT	
V13	Sync. Amplifier	6BA4	6BA4	5CE	
V14	Phase Inverter - Vert. Oscillator	6SN7GT	6SN7GT	8BD	
V15A	Vert. Output	6S4	6S4	9AC	
B	Vert. Output	6AQ5	6AQ5	7BZ	
V16	Horiz. Phase Det.	6AL5	6AL5	6BT	
V17	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V18	Horiz. Output	6BG6G	6BG6G	5BT	
V19	Damper	6W4GT	6W4GT	4CG	
V20A	H.V. Rectifier	1X2A	1X2A	7CB	
B	H.V. Rectifier	1X2	1X2	7CB	
V21	L.V. Rectifier	5U4G	5U4G	5T	
V22A	Picture Tube	17BP4A	17BP4A	12D	
B	Picture Tube	16TP4	16TP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	AIRLINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	80	450	47X376	AF888J		UP8445		TVL-2777	▬ Filter
B	30	450							▲ Filter
C2A	80	450	47X376	AF888J		UP8445		TVL-2777	▬ Filter
B	30	450							▲ Filter
C3A	10	450	47X375	AF22J		UP1145V5		TVL-3749	■ Filter
B	10	450		PRS50/50					▲ Filter
C	40	50							Vert. Output Cathode
C4	5	25	47X378	PRS150/4		BR550		TVA-1203	Sync. Amp. Cathode
C5	3-9		31B-207						Variable Trimmer
C6	.5-3		31B-205		829-3				Variable Trimmer
C7	120		13D-045	SI120	D6-121		GP2K-120	19C29	RF Amp. Dec.
C8	1000		13D-041	BPD-001	DD-102		801-001	19C1	RF Amp. Fil.
C9	100		13D-046	SI100N750	TCN-100		N750L-100	29C16	RF Coupling
C10	.5-3		31B-205		829-3				Variable Trimmer
C11	20		13D-042	SI20NPO	TCZ-20		NPOK-20		Osc. Grid Cap.
C12	10		13D-064	SI10N750	TCN-10		N750K-10	19C4	Fixed Trimmer
C13	.5-3		31B-206		829-3				Variable Trimmer
C14A	1000		13D-071	BPD-2X001	DD-2-102		812-2X001	29C7	RF Bypass
B	1000		13D-071						Conv. Fil. Bypass
C15	10		13D-053	SI10NPO	TCZ-10		NPOK-10	19C3	Fixed Trimmer
C16	72	500	13B-033						Fixed Trimmer
C17	300		13D-092	SI300	D6-301		GP2K-300	19C14	IF Coupling
C18	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	AGC Filter
C19	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	RF Bypass
C20	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	1st V. IF Dec.
C21	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	1st V. IF Fil.
C22	47			SI47NPO	TCZ-47		NPOM-47	29C14	Fixed Trimmer
C23	270	500	47X445	1468-00025	D6-271	5W5T25	GP2K-270	19C31	IF Coupling
C24	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	AGC Filter
C25	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	RF Bypass
C26	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	2nd V. IF Dec.
C27	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	2nd V. IF Fil.
C28	56	500			TCZ-56		NPOM-56		Fixed Trimmer
C29	270	500	47X445	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	IF Coupling
C30	47	500	47X565	1469-00005	TCZ-47	5R5Q5	NPOM-50	MS-45	Fixed Trimmer
C31	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	RF Bypass
C32	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	3rd V. IF Dec.
C33	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	3rd V. IF Cathode
C34	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	3rd V. IF Fil.
C35	270	500	47X445	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	IF Coupling
C36	5		47X562	SI5NPO	TCZ-4.7	5R5V5	NPOK-5	MS-55	V. Diode Filter
C37	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	V. Det.-DC Res. Fil.
C38	360	500	47X568	1469-00035	TCN-360		GP2K-360		Fixed Trimmer
C39	43		47X563				NPOL-43		Peaking
C40	.05	400	D67503	P488-05	DF-503	PTE4S5		4TM-S5	Video Coupling
C41	.05	400	D67503	P488-05	DF-503	PTE4S5		4TM-S5	Video Coupling
C42	.1	600	F65104	P688-1	DF-104	PTE6P1		6TM-P1	Video Coupling
C43	.05	400	D67503	P488-05	DF-503	PTE4S5		4TM-S5	Video Coupling
C44	.1	200	B65104	P288-1	DF-104	PTE4P1		2TM-P1	Pic. Tube Cath.
C45	1000	500	47X569	1468-001	D6-102	1W5D1	GP2L-001	1FM-21	Hor. Sweep Coupling
C46	.05	400	D67503	P488-05	DF-503	PTE4S5		4TM-S5	AGC Filter
C47	.5	200	B65504	P288-5		GT2P5		2TM-P5	AGC Filter
C48	.5	200	B65504	P288-5		GT2P5		2TM-P5	AGC Filter
C49	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	AGC Filter
C50	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	S. IF Dec.
C51	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	S. IF Cathode
C52	5000		47X507	BPD-005	DD-502	1D5D5	811-005	29C1	Limiter Grid Filter
C53	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	Limiter Plate Dec.
C54	1000		47X519	SI1000	D6-102	1W5D1	GP2L-001	19C1	Limiter Screen
C55	270	500	47X445	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	RF Bypass
C56	5000		47X507	BPD-005	DD-502	1D5D5	811-005	29C1	Discr. Fil.
C57	.1	400	D65104	P488-1	DF-104	PTE4P1		4TM-P1	Sync. Coupling

TV PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP	RATING VOLT	AIRLINE Part No.	REPLACEMENT DATA: AEROVOX Part No.	CENTRALAB Part No.	CORNELL DUBILIER Part No.	ERIE Part No.	SPRAGUE Part No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C58	.05	400	D67503	P488-05	DF-503	PTE4S5		4TM-S5	Sync. Coupling
C59A	2000		*76X7	*PDC-100	PTX4D3	PTX4D3	GP2M-00S	6TM-D3	Integrator Net
B	5000			P868-005	PTE5D5	811-005	6TM-D5	Integrator Net	
C	5000			P868-005	PTE5D5	811-005	6TM-D5	Integrator Net	
C60	4700	500	47X543	1467-005	D6-4T8	IDS05	GP2M-0047	1FM-35	Vert. Osc. Grid
C61	.05	400	P65503	P488-05		PTE4S5		4TM-S5	Vert. Discharge
C62	.25	400	D65254	P488-25		GTX4P25		4TM-P25	Vert. Sweep Coupling
C63	1000		47X519	SD.000	D6-10S	1WSDI	GP2L-00S	19C1	Hor. Sync. Coupling
C64	1000		47X519	SD.000	D6-10S	1WSDI	GP2L-00S	19C1	Hor. Sync. Coupling
C65	.05	200	P65503	P488-05	D6-10S	PTE4S5	82L-S	4TM-S5	Voltage Divider
C66	.05	600	P67502	P488-05	DF-503	PTE5S5		6TM-S5	Hor. Feedback
C67	.005	200	P65502	P488-005	D6-10S	PTE4D5	81L-00S	6TM-D5	AFC Filter
C68	.05	200	P65503	P288-05	DF-503	PTE4S5		2TM-S5	AFC Filter
C69	330	500	47X570	1469-0003	D6-331	SRS Y3	GP2K-330	MS-33	Hor. Feedback
C70	3900	500	47X572	1464-004		1DR3D4		MS-34	Horiz. Osc. Grid
C71	.250	500	47X445	S127C	D6-37I	SRS Y25	GP2K-370	18C31	Horiz. Discharge
C72	390	500	47X571	1464-0004	D6-391	1WSY4	GP2K-390	1TM-34	Horiz. Sweep Coupling
C73	.5	200	B65504	P288-5		GT3P5		2TM-P5	Horiz. Output Cath.
C74	1000		47X519	SD.000	D6-10S	1WSDI	GP2L-00S	19C1	Horiz. Output Cathode †
C75	.05	600	P67503	P488-05	DF-503	PTE5S5		6TM-S5	Horiz. Output Screen
C76	1000		47X519	SD.000	D6-10S	1WSDI	GP2L-00S	19C1	Horiz. Output Screen †
C77	.03	400	D65303	P488-03		PTE5S3		6TM-S3	Damper Filter
C78	.05	400	D65303	P488-05		PTE4S5		4TM-S5	Damper Filter
C79	.25	200	B65254	P488-25		GTX4P25		2TM-P25	Horiz. Sweep Coupling
C80	5000	2000	47X561	HV50C			TV3-503		H.V. Filter
C81	.01	400	46X401	P488-01	D6-10S	PTE4S1	82L-01	4TM-S1	Line Filter
C82	.01	600	46X402	P488-01	D6-10S	PTE4S1	82L-01	4TM-S1	Line Filter

* Items C58A, C59B, C59C, R67A, R67B and R67C are combined into one unit.
† Not used in all models.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: AIRLINE Part No.	IRC Part No.	CLAROSTAT Part No.	CENTRALAB Part No.	INSTALLATION NOTES
R1A	10,000	]	40X333	QU-112	AG-15-3	B-12	Contrast Control
B	Shaft	]	Not req.	Not req.	FS-3	Not req.	Attach to R1A Per Instructions
R2A	10,000	]	40X323	QU-123	AG-44-3	B-31	Horizontal Hold Control
B	Shaft	]	Not req.	Not req.	RS-2	Not req.	Attach to R2A Per Instructions
R3A	500,000	]	40X290	QU-133	AG-58-3	B-59	Brightness Control
B	Shaft	]	Not req.	Not req.	RS-2	Not req.	Attach to R3A Per Instructions
R4A	30,000	]	40X294	QU-114			Vertical Linearity Control
B	Sleeve Bushing	]	Not req.		S-3		Attach to R4A Per Instructions
R5A	2.5 Meg	]	40-393	QU-239	AG-84-3	B-83	Height Control
B	Shaft	]	Not req.	Not req.	FKS-1/4	Not req.	Attach to R5A Per Instructions
R6A	1.5 Meg	]	40X291	QU-138	AG-83-3	B-75	Vertical Hold Control
B	Shaft	]	Not req.	Not req.	RS-3	Not req.	Attach to R6A Per Instructions
R7	4000	2	40X304				Focus Control - Wire Wound

† Fashion shaft to duplicate original.

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: AIRLINE Part No.	IRC Part No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R8	390Ω		12A046	BTS-3900	Antenna Coil Shunt
R9	47kΩ	20%	12A039	BTS-47K	AGC Network
R10	220Ω	2%	12A049	BTS-2200	RF Amp. Decoupling
R11	10kΩ	20%	12A040		RF Coil Shunt
R12	47,000	5%	12A042	BTS-4700-5%	Mixer Grid
R13	22kΩ	20%	12A041		Mixer Grid
R14	15kΩ	20%	12A021		Mixer Plate
R15	10kΩ	20%	12A040		Osc. Grid
R16	4700Ω		12A042	BTS-4700	Osc. Plate
R17	1000Ω		B84102	BTS-1000	AGC Network
R18	10kΩ		B83102		1st Video IF Amp. Grid
R19	47Ω		B83470		1st Video IF Amp. Cathode
R20	1000Ω		B84102	BTS-1000	1st Video IF Amp. Decoupling
R21	150Ω		B84151	BTS-150	1st Video IF Amp. Decoupling
R22	470Ω		B83822		2nd Video IF Amp. Grid
R23	33Ω		B83330		2nd Video IF Amp. Cathode
R24	1000Ω		B84102	BTS-1000	2nd Video IF Amp. Decoupling
R25	33Ω		B84331	BTS-330	Decoupling
R26	12kΩ		B83123		3rd Video IF Amp. Grid
R27	150Ω		B84151	BTS-150K	3rd Video IF Amp. Cathode
R28	2200Ω		B84222	BTS-2200	3rd Video IF Amp. Decoupling
R29	22kΩ		B84223	BTS-22K	3rd Video IF Amp. Plate Choke Shunt
R30	4700Ω		B83472	BTS-4700	Video Detector Diode Load
R31	33kΩ		B84333	BTS-33K	AGC Keying Grid
R32	22kΩ	20%	B84223	BTS-22K	AGC Network
R33	150kΩ	20%	B84154	BTS-150K	AGC Network
R34	1000Ω		B84102	BTS-1000	AGC Network
R35	470kΩ		B84654	BTS-470K	AGC Network
R36	1Meg		B84874	BTS-1Meg	AGC Network - See Note 1
R37	2700Ω	5%	C82272	BTA-2700-5%	Voltage Divider
R38	5600Ω	20%	C84562	BTS-5600	1st Video Amp. Plate
R39	1Meg	20%	B84105	BTS-1Meg	2nd Video Amp. Grid
R40	100Ω		B84101	BTS-100	2nd Video Amp. Cathode
R41	3900Ω		C83392	BTA-3900	2nd Video Amp. Plate
R42	10kΩ		B84103	BTA-10K	Isolation
R43	1Meg		B84105	BTS-1Meg	DC Resistance Diode Load
R44	100kΩ	5%	B85104	BTS-100K-5%	Voltage Divider
R45	100kΩ		B85104	BTS-100K	Picture Tube Grid
R46	100kΩ	20%	B84104	BTS-100K	Picture Tube Cathode
R47	82Ω		B84820	BTS-82	Sound IF Amp. Cathode
R48	1000Ω		B84102	BTS-1000	Sound IF Amp. Decoupling
R49	470kΩ		B85474	BTS-470K	Limiter Grid
R50	18kΩ		B84223	BTS-18K	Limiter Screen - See Note 2
R51	1000Ω		B84102	BTS-1000	Limiter Plate Decoupling
R52	100kΩ		B84104	BTS-100K	Disc. Diode Load
R53	100kΩ		B84104	BTS-100K	Disc. Diode Load
R54	5.1Ω		43X239	BW-5-5.1	Disc. Filament - Wire Wound
R55	10kΩ		B84103	BTS-10K	Isolation
R56	1Meg		B84105	BTS-1Meg	Sync. Amp. Grid

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING	REPLACEMENT DATA: AIRLINE Part No.	IRC Part No.	IDENTIFICATION CODES
R57	22kΩ	5%	B84233	BTA-22K-5%	Sync. Amp. Cathode
R58	12kΩ		B84123	BTS-12K	Sync. Amp. Plate
R59	2200Ω	20%	B84222	BTS-2200	Isolation
R60	47kΩ	20%	B84473	BTS-47000	Sync. Sep. Cathode
R61	1Meg		B84824	BTS-1Meg	Sync. Sep. Plate - See Note 1
R62	68kΩ		B84683	BTS-68K	Voltage Divider
R63	1Meg		B84105	BTS-1Meg	Phase Inv. Grid
R64	3300Ω	20%	B83332	BTS-3300	Phase Inv. Cathode
R65	1000Ω		B84102	BTS-1000	Phase Inv. Plate
R66	3300Ω	20%	B83333	BTS-3300	Phase Inv. Plate
R67A	22kΩ			BTS-22K	Integrator
B	82,000Ω		78X7	BTS-82000	Integrator
C	8200Ω			BTS-8200	Integrator
R68	1Meg		B84105	BTS-1Meg	Vertical Osc. Grid
R69	100K		B85104	BTS-100K	Vertical Osc. Grid
R70	1.5Meg		B84155	BTS-1.5Meg	Vertical Osc. Plate - See Note 4
R71	82,000		B83823	BTS-82000	Vertical Peak
R72	1.8Meg		B84185	BTS-1.8Meg	Vertical Output Grid
R73	820Ω		B84821	BTS-820	Vertical Output Cathode
R74	27kΩ		B84273	BTS-27K	Horizontal Phase Det. Diode Load
R75	100kΩ	20%	B84104	BTS-100K	Horizontal Phase Det. Diode Load
R76	100kΩ	20%	B84104	BTS-100K	Horiz. Phase Det. Diode Load
R77	4.7Meg	20%	B85475	BTS-4.7Meg	Horizontal Phase Det. Diode Load
R78	470kΩ	20%	B85474	BTS-470K	Horizontal AFC Filter
R79	1500Ω	20%	B84152	BTS-1500	Horizontal MV Cathode
R80	100kΩ	20%	B84104	BTS-100K	Horizontal MV Grid
R81	470Ω		B82472	BTS-4700	Horizontal MV Plate
R82	270kΩ	5%	B84274	BTS-270K-5%	Horizontal MV Plate
R83	150Ω		B84851	BTS-150	Parasitic Supp.
R84	1Meg	20%	B84105	BTS-1Meg	Horizontal Output Grid
R85	39Ω	1		BTA-390	Horizontal Output Cathode - See Note 3
R86	390Ω	1		BTA-3900	Horizontal Output Cathode - See Note 3
R87	30kΩ	5	43X255		Horizontal Output Screen
R88	18kΩ	2	C83323	BTB-18K	Horizontal Feedback - See Note 2
R89	22kΩ	2	D84223	BTB-22K	Voltage Divider
R90	4700Ω		B84472	BTS-4700	Horizontal Lin. Coil Shunt
R91	3.3Ω		43X338		HW Rect. Filament Wire Wound
R92	1Meg	20%	C85105		HV Filter
R93	10kΩ	10	43X247	1 3/4A-10K	Voltage Divider - Wire Wound
R94	1500Ω	10	43X346	1 3/4A-1500	Fliter - Wire Wound
R95	7500Ω	10	43X256	1 3/4A-7500	Voltage Divider - Wire Wound
R96	500Ω	10	43X245	1 3/4A-500	Voltage Divider - Wire Wound
R97	500Ω	3	43X257	3/4A-500	Focus Coil Shunt - Wire Wound

* Items R67, R67B, R67C, C58A, C59B and C59C are combined into one unit.
Note 1. Some models use 820kΩ resistor in this application.
Note 2. Some models use 22kΩ resistor in this application.
Note 3. Some models use single 150Ω 2 watt resistor in place of R85 and R86.
Note 4. When a 6AG5 vertical amplifier tube is used R70 is 470kΩ.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA: AIRLINE Part No.	STANCOR Part No.	MERIT Part No.	CHICAGO Part No.
T1	117VAC	760VCT @ 2A	5V	6.3V @ 1.2A	53X303	P-8159 ③		TP-392
		250ADC @ 3A		SEC. 4 6.3V @ 6.0A				

③ File out mounting holes to fit replacement.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA: AIRLINE Part No.	STANCOR Part No.	MERIT Part No.	CHICAGO Part No.	NOTES
T2	270Ω	90Ω	54X5	A-8123 ①			Vertical Block Osc.
T3	485Ω	4.5Ω	53X315				Horizontal Output
	Tap 81Ω	SEC. 2 5Ω Tap @ .4Ω & 6.5Ω					
T4	1060Ω	Tap 12.5Ω	51X149	A-8123			Vertical Output
T5A	13Ω		9A2149	DY-7			Horizontal Deflection Coil
B	HEI						Vertical Deflection Coil
T6	650Ω		9A2147				Focus Coil

① New mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA: AIRLINE Part No.	STANCOR Part No.	MERIT Part No.	CHICAGO Part No.	INSTALLATION NOTES
T7	5.6KΩ	4.3Ω	440Ω	.85Ω	51X134	A-3877 ①	A-2950 ①	R0-9 ①	① New mounting hole.

SPEAKER

ITEM No.	RATINGS FIELD RES.	RATINGS V. C. IMP.	REPLACEMENT DATA: AIRLINE Part No.	VIKING Part No.	QUAM Part No.	NOTES
SP1	PM	4.3Ω	12A490		12A4A	
	CONE DIA.	V. C. DIA.				
SP2	11 7/8"	1"				

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE @ CURRENT (1000 ~)	REPLACEMENT DATA: AIRLINE Part No.	STANCOR Part No.	MERIT Part No.	CHICAGO Part No.	INSTALLATION NOTES
L1	250A	52Ω	2 Henries	52X68	C-2328	C-2974 ①	TR3590 ①	① New mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: AIRLINE Part No.	MEISSNER Part No.	NOTES
L2	Antenna Coil	0Ω	0Ω			Refer Misc.
L3	Fil. Choke	0Ω				
L4	RF, Mixer Grid and Osc. Coils	0Ω				Refer Misc.
L5	Fil. Choke	0Ω				
L6	1st Video IF	.5Ω		31B-253		
L7	Conv. Plate Trap	.5Ω		31A-090		
L8	1st Video IF Coupling	1.1Ω		31B-338		
L9	Fil. Choke	0Ω		9A2053		
L10	2nd Video IF -Sound Take Off	.2Ω	0Ω	9A2076		
L11	Fil. Choke	0Ω		9A2033		
L12	2nd Video IF	.2Ω	0Ω	9A2055		Includes Trap
L13	Adj. Channel Video Trap	.1Ω	.1Ω	9A2073		
L14	Fil. Choke	0Ω		9A2033		
L15	RF Choke	2.7Ω		9A1979		
L16	4th Video IF	.3Ω	.1Ω	9A2071		Includes Trap
L17	Peaking	1Ω		9A2080	19-1923	390 Microhenries (Green Dot)
L18	Peaking	4.8Ω		9A2086	19-1920 ①	95 Microhenries (Yellow Dot-Wound on 4.7KΩ Resistor)
L19	Peaking	7.3Ω		9A2088	19-1922	196 Microhenries (Blue Dot)
L20	4.5MC Trap	.3Ω		9A2074		
L21	Peaking	5.6Ω		9A2087	19-1921	125 Microhenries (White Dot)
L22	Peaking	6.6Ω		9A2089	19-1921 ②	183 Microhenries (Red Dot-Wound on 2.2KΩ Resistor)
L23	Sound IF	.2Ω	.1Ω	9A1986		
L24	Disc. Trans.	.1Ω	.1Ω	9A2049		
L25	Horiz. Freq.	43Ω		9A2096		
L26	Horiz. Lin	23.		9A2111		
L27	Horiz. Size	.6Ω		9A1976		

① Parallel with 4.7KΩ resistor.
② Parallel with 2.2KΩ resistor.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA: AIRLINE Part No. FUSE	AIRLINE Part No. HOLDER	LITTELFUSE Part No. FUSE	LITTELFUSE Part No. HOLDER	REMARKS
M1	3AG SLO-BLO	.250A	16X147		313.250	357001	

MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE Part No.	NOTES
M2	RF Tuner	25A1071	
M3	Ion Trap	2A408	
	Antenna Coil	9A2119	Channel 2
		9A2120	Channel 3
		9A2121	Channel 4
		9A2122	Channel 5
		9A2123	Channel 6
		9A2124	Channel 7
		9A2125	Channel 8
		9A2126	Channel 9
		9A2127	Channel 10
		9A2128	Channel 11
		9A2129	Channel 12
		9A2130	Channel 13
	Oscillator Coil	9A2131	Channel 2
		9A2132	Channel 3
		9A2133	Channel 4
		9A2134	Channel 5
		9A2135	Channel 6
		9A2136	Channel 7
		9A2137	Channel 8
		9A2138	Channel 9
		9A2139	Channel 10
		9A2140	Channel 11
		9A2141	Channel 12
		9A2142	Channel 13
B2	Trimmer	17A261	Horizontal Drive (40-370MMF)
	Safety Glass	17X139	Model 05WG-3045A
	Safety Glass	17X234	Model 05WG-3038A
	Escutcheon	42X1029	Contrast
	Escutcheon	42X1061	Channel Selector
	Escutcheon	42X1068	Control Panel
	Knob	10A741	Channel Selector
	Knob	10A742	Fine Tuning
	Knob	10A756	Contrast

AIRLINE MODELS 05WG-3038A, 05WG-3045A

RADIO PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		AIRLINE PART No.	STANDARD REPLACEMENT		
V23A	FM RF Amplifier	6AB4	6AB4	5CE	
B	FM RF Amplifier - Mixer	12AT7	12AT7	9A	Used in Model 05WG-3038A
V24	FM Mixer	6AB4	6AB4	5CE	
V25	FM Oscillator - AM Converter	6BE6	6BE6	7CH	
V26	1st FM-AM IF Amp.	6BA6	6BA6	7BK	
V27	2nd FM IF Amp.	6BA6	6BA6	7BK	
V28	Ratio Detector	6AL5	6AL5	6BT	
V29	Detector - AVC-AF Amplifier	6AV6	6AV6	7BT	
V30	Power Output	6V6GT	6V6GT	7AC	
V31	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	AIRLINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C83A	40	350	45X359	AF884J4A		UP44235C		TVL-4605	▲ Filter
B	40	350							■ Filter
C	20	350							▲ Filter
D	20	25							Output Cathode
C84	5	100	45X361	PRS150/4		BR415		TVA-1402	Stabilizing Cap
C85	330	500	47X470	1468-00035	D6-331	5W5T3	GP2K-330	19C14	RF Coupling
C86	500		47X508	SI500	D6-501	5W5T5	GP2K-501	19C32	FM RF Cathode
C87A	100		76X4	SI100	D6-101	5W5T1	GP1K-100	19C11	RF Coupling
B	100			SI100	D6-101	5W5T1	GP1K-100	19C11	RF Coupling
C88	5000		47X507	BPD-005	DD-502	1D5D5	811-005	29C1	AVC Filter
C89	2.2		47X557		TCZ-2.2				Osc. Coupling
C90	.05	200	B66503	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C91	30		47X558	SI30	D6-300	5W5Q3	GP1K-30	19C24	Osc. Grid Cap
C92	2.2		47X557		TCZ-2.2				Osc. Feedback
C93	5000		47X507	BPD-005	DD-502	1D5D5	811-005	29C1	Osc. Anode Bypass
C94	10		47X523	SI10NPO	TCZ-10	5R5Q1	NPOK-10	19C3	Fixed Trimmer †
C95	130		47X559		TCN-130		N750L-130		Fixed Trimmer
C96	5000		47X507	BPD-005	DD-502	1D5D5	811-005	29C1	Conv. Decoupling
C97	5000		47X507	BPD-005	DD-502	1D5D5	811-005	29C1	AVC Filter
C98	5000		47X507	BPD-005	DD-502	1D5D5	811-005	29C1	1st IF Plate Dec.
C99	5000		47X507	BPD-005	DD-502	1D5D5	811-005	29C1	1st IF Screen
C100A	50		47X112	SI50	D6-500	5W5Q5	GP1K-50	19C28	Diode RF Filter
B	50			SI50	D6-500	5W5Q5	GP1K-50	19C28	Diode RF Filter
C101	5000		47X507	BPD-005	DD-502	1D5D5	811-005	29C1	2nd IF Dec.
C102	5000		47X507	BPD-005	DD-502	1D5D5	811-005	29C1	2nd IF Fil.
C103	220	500	47X468	1468-00025	D6-221	5W5T25	GP2K-220	19C13	Diode Load Cap
C104	2700		47X492	SI2700	D6-272	1W5D25	GP2M-0027	1FM-225	De-emphasis
C105	.05	200	B65503	P288-05	DF-503	PTE4S5		2TM-S5	Audio Coupling
C106	68	500	47X471	SI68	D6-680	5W5Q7	GP1K-68	MS-47	Tone Comp.
C107	.02	200	B66203	P488-02	DF-203	PTE4S2		2TM-S2	Tone Comp. †
C108	.005	600	D66502	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Audio Coupling
C109A	220		*	SI220	PC-80	5W5T25	GP2K-220	19C13	AF Amp. Plate
B	20000			P688-02		PTE4S2		6TM-S2	Audio Coupling
C110	.1	400	D66104	P488-1	DF-104	PTE4P1		4TM-P1	AF Amp. Dec.
C111	.01	200	B66103	P488-01	D6-103	PTE4S1	821-01	4TM-S1	Tone Comp. §
C112	.001	800	H66102	P1088-001		PTE16D1		MB-D1	Output Plate

§ Model 05WG-3038A uses .004MFD in this application. Mfgrs. part # B66402
* Items C109A, C109B, R122A and R122B are combined into one unit.
† Model 05WG-3038A uses 20MMF in this application. Mfgrs. part # 47X516.
‡ Models 05WG-3038A uses .04MFD in this application. Mfgrs. part # B66403.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	AIRLINE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R98A	500KΩ	½	40X311	Q13-133	AG-60-Z	BSK-60	Tone Control
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R1A Per Instructions
R99A	500KΩ	½	36X381	Q13-133X	AK-80	BTSK-66-S	Volume Control - Tapped @ 100KΩ
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R2A Per Instructions
C	Switch		Not req.	76-1	SWB	Not req.	Attach to R2A Per Instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	AIRLINE PART No.	IRC PART No.	
R100	47Ω	½	B85470		Parasitic Suppressor
R101	470	½			Parasitic Suppressor - See Note 5
R102	22KΩ	½	B85223		Osc. Grid
R103	1000Ω	½	B85102	BTS-1000	Osc. Anode
R104	220Ω	½	B84221	BTS-220	FM RF Amp. Cathode
R105	470KΩ	½	B85474		FM Mixer Grid
R106	82Ω	½	B84680	BTS-82	1st IF Amp. Cathode - See Note 6
R107	1000Ω	½	B85102	BTS-1000	1st IF Amp. Plate Decoupling
R108	6800Ω	½	B84682	BTS-6800	1st IF Amp. Screen
R109	82Ω	½	B84680	BTS-82	2nd FM IF Amp. Cathode - See Note 6
R110	1000Ω	½	B85102	BTS-1000	2nd FM IF Amp. Decoupling
R111	6800Ω	½	B84682	BTS-6800	Ratio Detector Diode Load
R112	6800Ω	½	B84682	BTS-6800	Ratio Detector Diode Load
R113	3.6Ω	3	43X233	BW-½-3.6	Ratio Detector Diode Filament - Wire Wound

RADIO PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (CONT.)

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	AIRLINE PART No.	IRC PART No.	
R114	27KΩ		B85273	BTS-27K	De-emphasis
R115	100KΩ		B85104	BTS-100K	AVC Network
R116	270Ω		B84274	BTS-270	AVC Network
R117	1Meg		B85105	BTS-1Meg	AVC Network
R118	100KΩ		B85104	BTS-100K	AVC Network
R119	43KΩ				Diode Filter - See Note 7
R120	15KΩ		B85153	BTS-15K	Tone Comp.
R121	10Meg		B85106	BTS-10Meg	AF Amp. Grid
R122A	470KΩ		*	BTS-470K	AF Amp. Plate
B	470KΩ			BTS-470K	Output Grid
R123	43KΩ				AF Amp. Plate Decoupling - See Note 7
R124	270Ω		B84271	BTS-270	Output Cathode
R125A	1000Ω	4	43X224		Filter - Wire Wound
B	1400Ω	6			Filter - Wire Wound
R126	1000Ω		B85102	BTS-1000	AM Converter Decoupling - See Note 5
R127	470KΩ		B85474	BTS-470K	AVC Network - See Note 5

* Items R122A, R122B, C109A and C109B are combined into one unit.

Note 5. Not used in all models.

Note 6. Some models use 68Ω resistor in this application.

Note 7. Some models use 47KΩ resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T8	117VAC ⓐ .575	520VCT .085ADC	5VAC ⓐ 2A	6.3VAC ⓐ 2.5A	53X290			PH-70 ②

② Add series resistor to reduce plate voltage.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	AIRLINE PART No.	MEISSNER PART No.	IRC PART No.	
L28	FM Ant. Coil	.2Ω		35A9		CLA	.47 Microhenry
L29	RF Choke	3Ω		35A8		CLA	3.3 Microhenries
L30	FM RF Coil	0Ω		9A2066			
L31	Parasitic Supp.	.1Ω		9A2103			
L32	FM Osc. Coil	0Ω		9A2067			
L33	Loop Ant.	.2Ω	1.4Ω	9A2146			
L34	Cath. Choke	1.8Ω		35A5		CLA	2.2 Microhenries
L35	AM Osc. Coil	.4Ω	5.2Ω	9A2065	14-1073		
L36	1st AM IF	13Ω	14Ω	9A2062	16-6758		
L37	1st FM IF	.8Ω	.8Ω	9A2060	16-3487		
L38	2nd AM IF	13Ω	14Ω	9A2063	16-6758		
L39	2nd FM IF	1Ω	1Ω	9A2061	16-3487		
L40A	Ratio Det. Trans.	1.2Ω	.2Ω	9A2064			
B	Ratio Det. Trans.			9A2161			Alternate

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA							REMARKS
	AIRLINE PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M4		LQD-J	"Q" Q-33			96-T	0-3 Or S-3 0-1 Or S-1	Used in Model 05WG-3045A

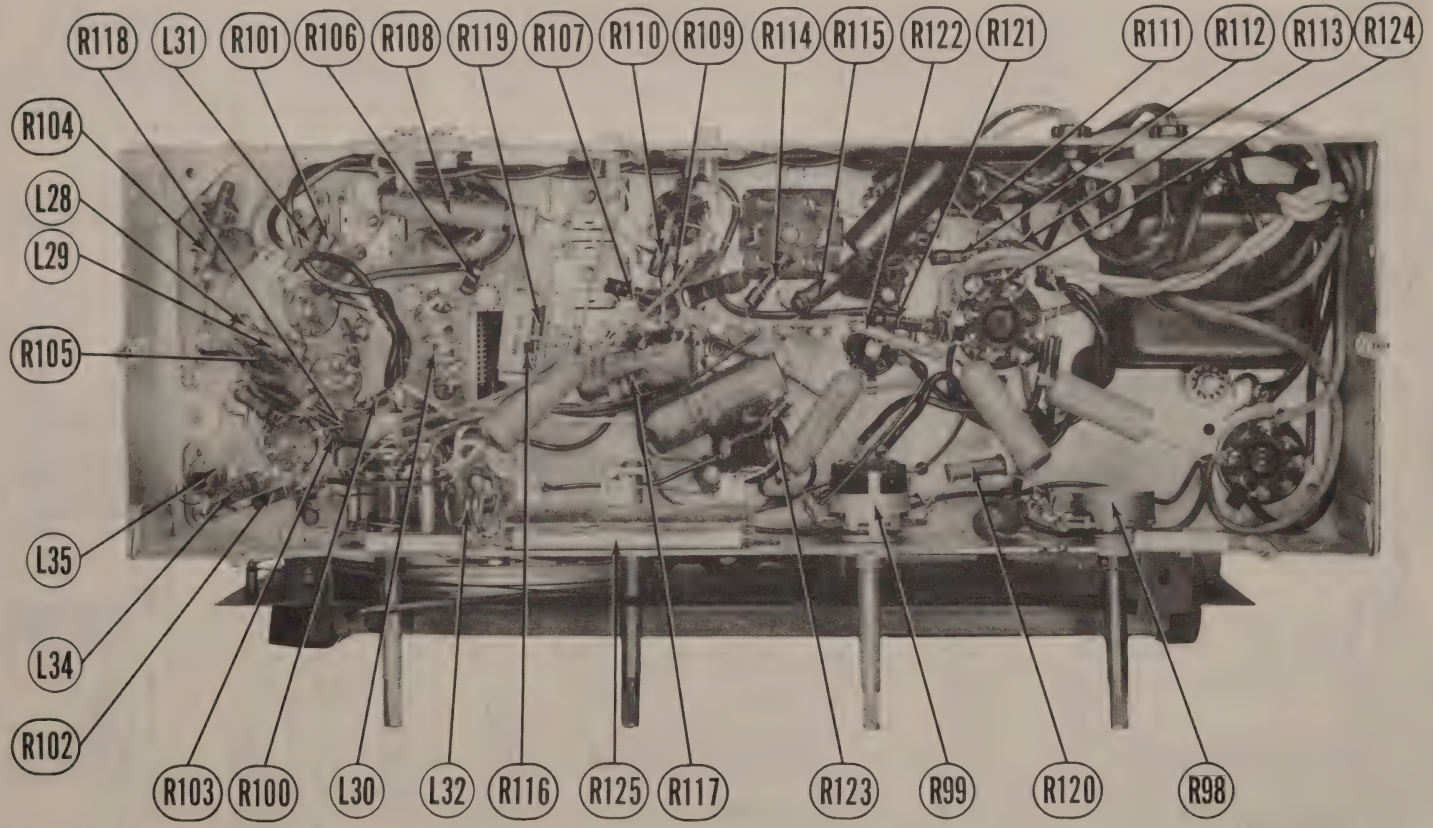
ASTATIC AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

DIAL LIGHTS

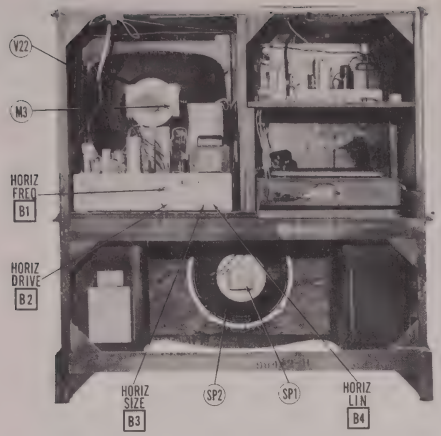
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					AIRLINE PART No.		
M5	Bayonet	6-8	.15	Brown	7A103		Type #47
M6	Bayonet	6-8	.15	Brown	7A103		Type #47

MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
M7	Switch	2A397	Function (TV-Phono-AM-FM)
M8	Tuning Capacitor	14A209	(17-507MMF, 14-187MMF)
	Escutcheon	4X1073	Model 05WG-3045A
	Escutcheon	4X1049	Model 05WG-3038A
	Knobs	10A759	Model 05WG-3045A
	Knobs	10A762	Model 05WG-3038A
	Glass	58X749	Dial (Model 05WG-3045A)
	Glass	58X737	Dial (Model 05WG-3038A)
	Pointer	15X251	



RADIO CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.
Turn the horizontal hold control to the mid-position of its range.
Adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.
Switch to another channel and back again, the picture should immediately fall into sync, and should hold sync. over 90% rotation of the hold control; if it doesn't, repeat the adjustment of B1.
Turn the horizontal drive trimmer (B2) counter clockwise until white vertical bars appear in the left center portion of the picture. Then turn B2 clockwise until the bars just disappear.
Adjust the horizontal size slug (B3) until the picture fills the mask.

DISASSEMBLY INSTRUCTIONS

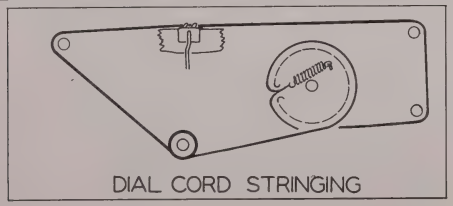
TV-CHASSIS REMOVAL

1. Remove four push-on type control knobs.
2. Remove six wood screws holding rear cover in place. Remove rear cover.
3. Disconnect built-in antenna.
4. Remove antenna terminal strip.
5. Disconnect TV audio plug.
6. Remove five 3/8" hex head from chassis. Remove chassis.

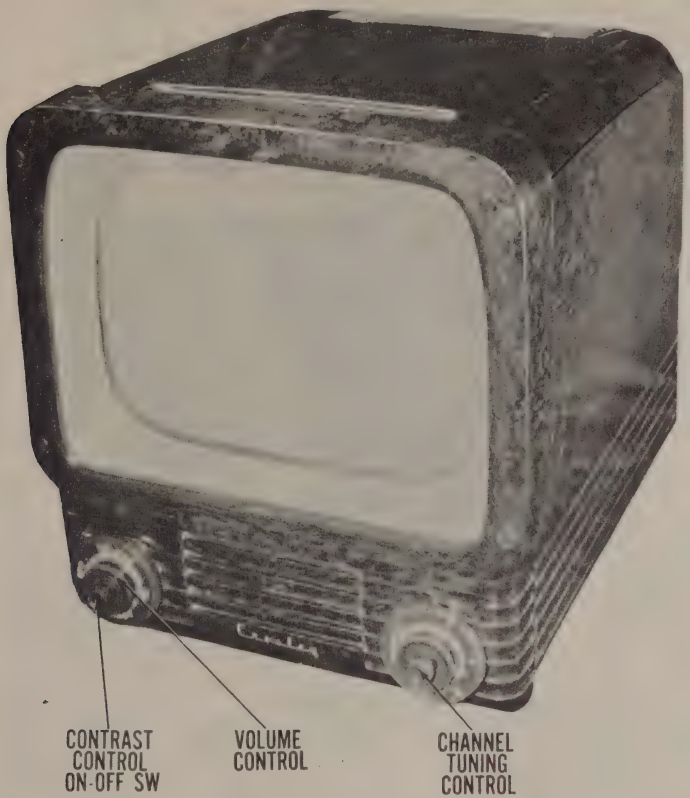
RADIO CHASSIS REMOVAL

1. Remove four push-on type control knobs.
2. Remove four wood screws securing rear cover to chassis. Remove rear cover.
3. Disconnect built-in antenna.
4. Disconnect phono jack.
5. Disconnect speaker.
6. Disconnect phono motor power leads.
7. Remove three 1/4" hex head bolts from chassis. Remove chassis.
8. Remove four 3/8" hex nuts from speaker. Remove speaker.

NOTE: FOR PICTURE TUBE REMOVAL THE CHASSIS MUST BE REMOVED AS OUTLINED ABOVE.



DIAL CORD STRINGING



CROSLEY
MODEL 10-428MU

CROSLEY MODEL 10-428MU

TRADE NAME	Crosley, Model 10-428MU
MANUFACTURER	Crosley Corp., 1329 Arlington St., Cincinnati, Ohio
TYPE SET	Television Receiver
TUBES	Twenty Four
POWER SUPPLY	110-120 Volts AC - 60 Cycle
RATING	1.8 Amp. @ 117 Volts AC
TUNING RANGE--BROADCAST	

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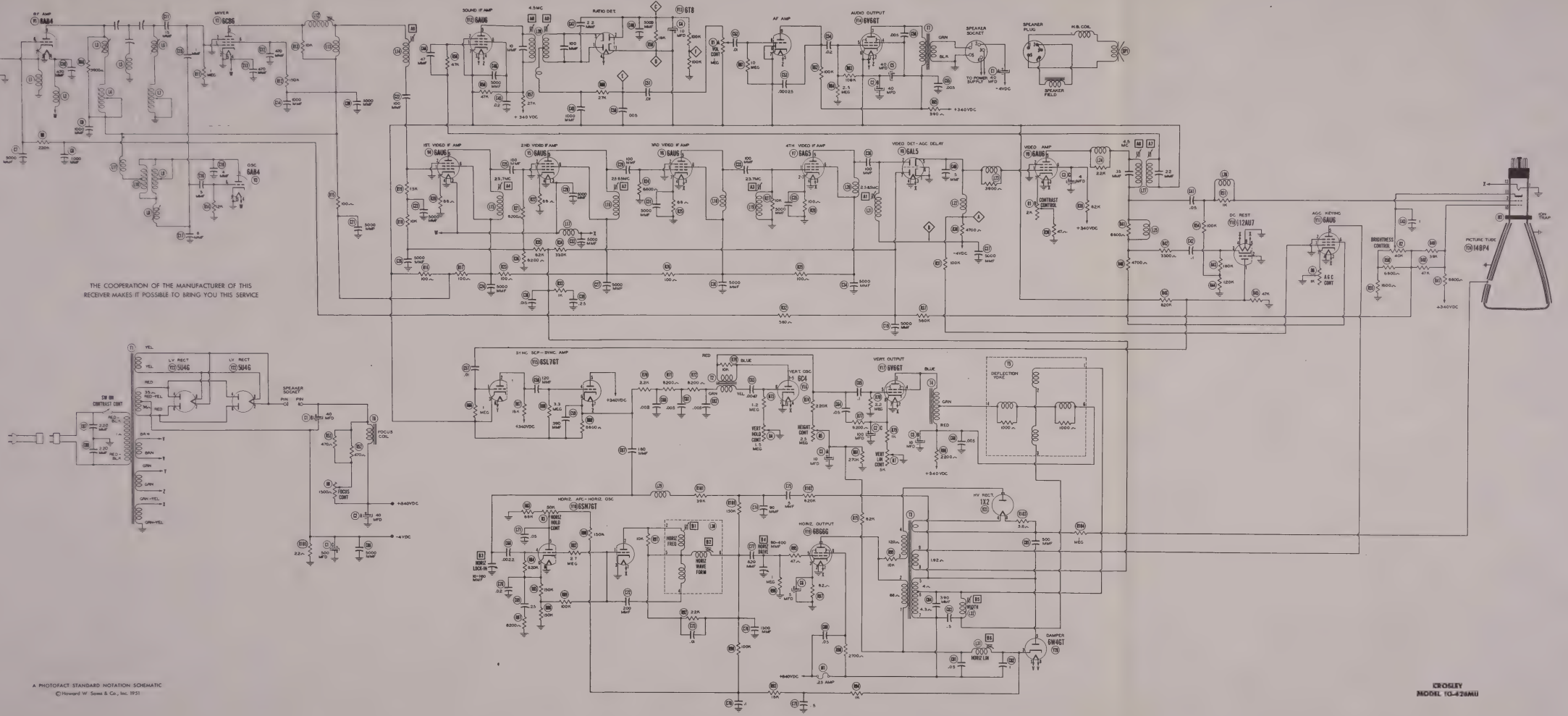
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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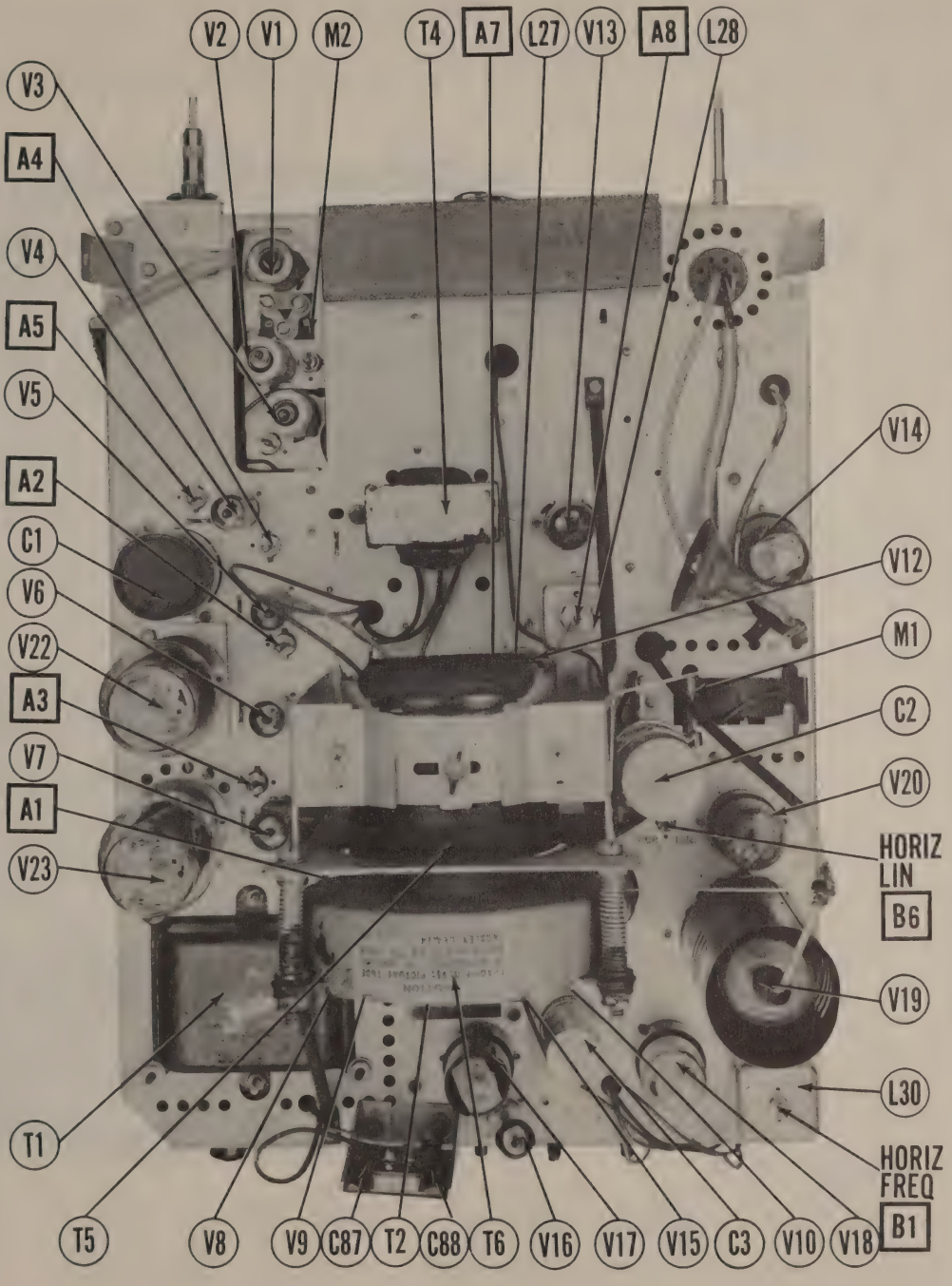
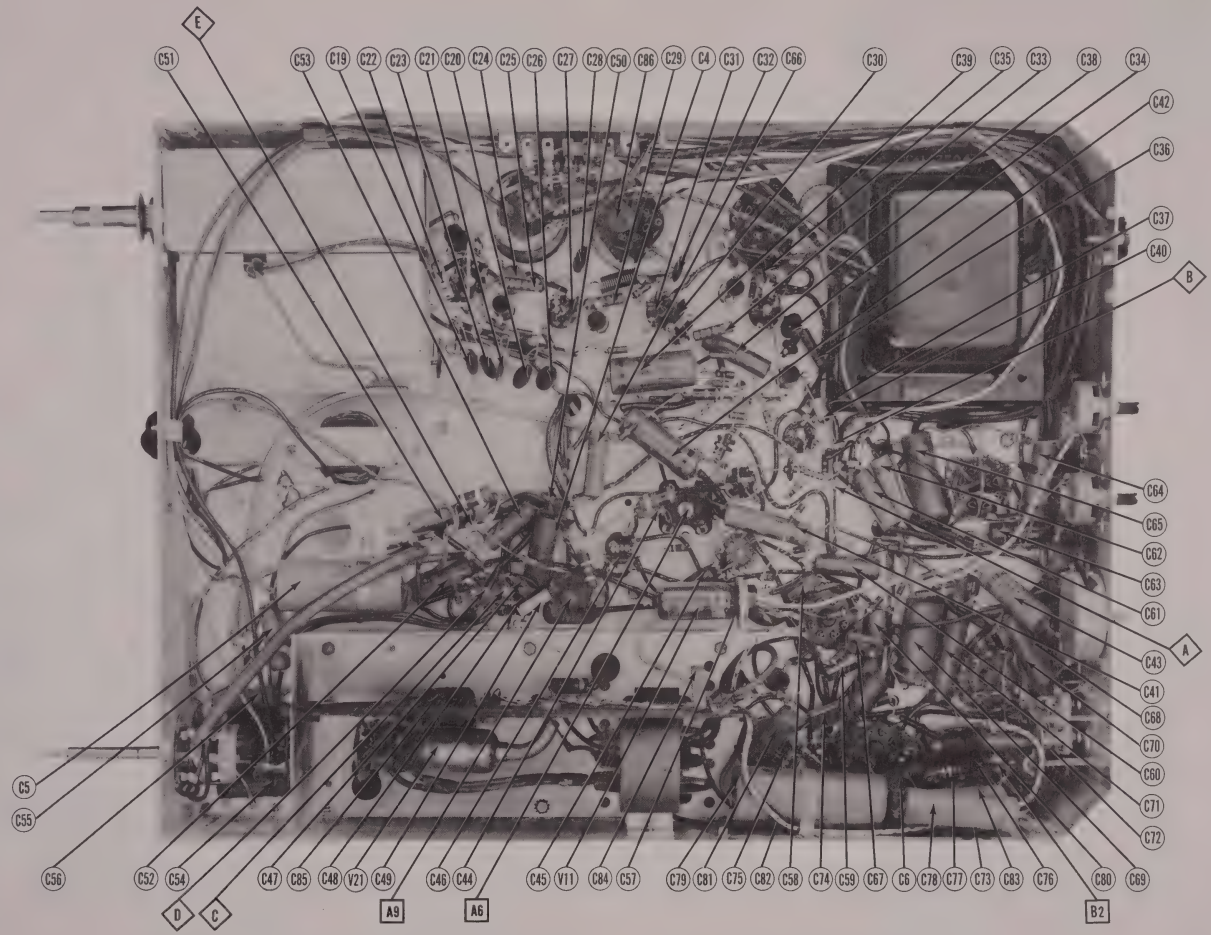
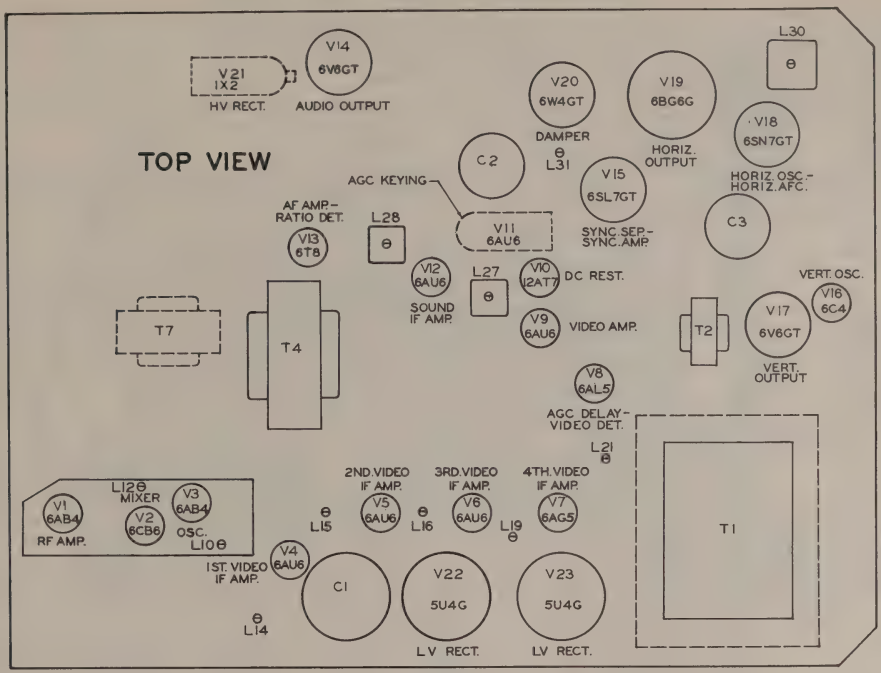
CROSLEY
MODEL 10-428MU

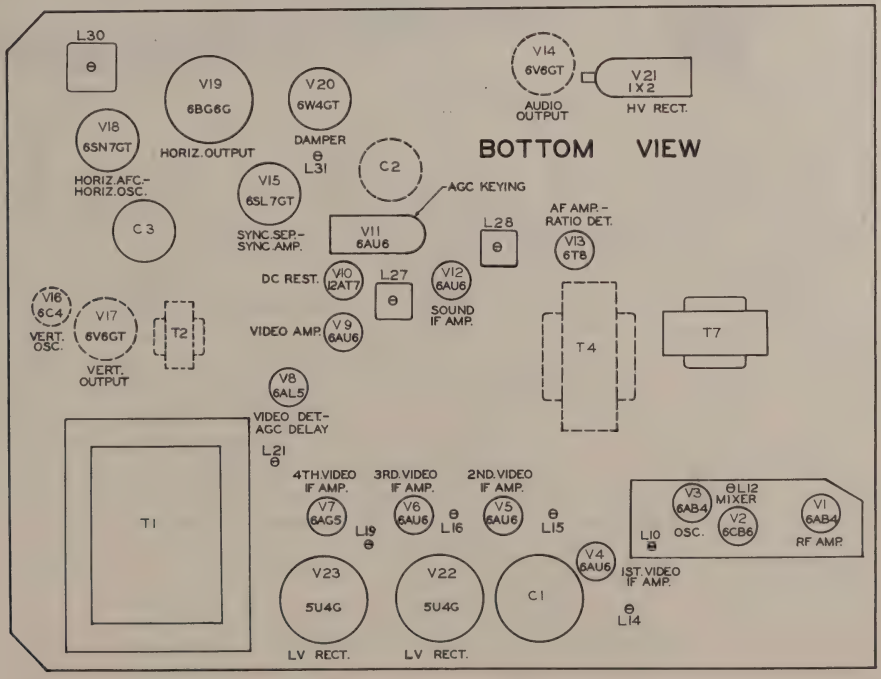


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube (V18) from its socket.

VIDEO IF ALIGNMENT

Remove the local oscillator tube (V3) to prevent the possibility of erroneous indications.
Connect a clip lead from Point B to the AGC line, (junction of R21 and C26).
During video IF alignment, the leads of the VTVM are connected to approximately 4 volts with respect to chassis, avoid grounding the VTVM case.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	Not used	25.65MC (Unmod.)	Any	USE VTVM DC probe to Point (A). Common to Point (B).	A1, A2	Adjust for maximum deflection. Attenuate signal generator to maintain less than 3.5V reading.
2.	"	"	"	23.7MC	"	"	A3, A4	"
3.	"	"	24MC	21.9MC 22.9MC 26.4MC	"	Vert. amp. to Point (A). Low side to chassis.	A5	Adjust A5 to place 26.4MC marker at 50% response as shown in figure 1. If necessary retouch A1 thru A4 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect a matched pair of 100KΩ (± 1%) resistors in series from Point (C) to Point (D). The junction of these two resistors is alignment Point (E) as shown on the schematic.
The leads of the VTVM are connected to approximately 135 volts with respect to chassis, avoid touching or grounding the VTVM case.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	.005MFD	High side to pin 1 (grid) of 6AU6 (V9). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to Point (C). Common to Point (D).	A6, A7, A8	Adjust for maximum deflection.
5.	"	"	"	"	DC probe to Point (E). Common to Point (F).	A9	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	.005MFD	High side to pin 1 (grid) of 6AU6 (V9). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. amp. to Point (C). Low side to chassis.	A6, A7, A8	Disconnect stabilizer capacitor C4. Adjust for maximum amplitude and symmetry as per figure 2.
5.	"	"	"	"	"	Vert. amp. to Point (E). Low side to chassis.	A9	Reconnect capacitor C4. Adjust A9 so 4.5MC occurs at center of crossover lines as per figure 3. SLIGHTLY retouch A8 for maximum amplitude and straightness of crossover lines.

THE RF TUNER PORTION OF THIS RECEIVER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THIS PORTION SHOULD NOT BE REQUIRED IN THE FIELD.

FIG. 1

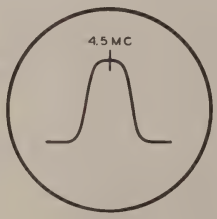
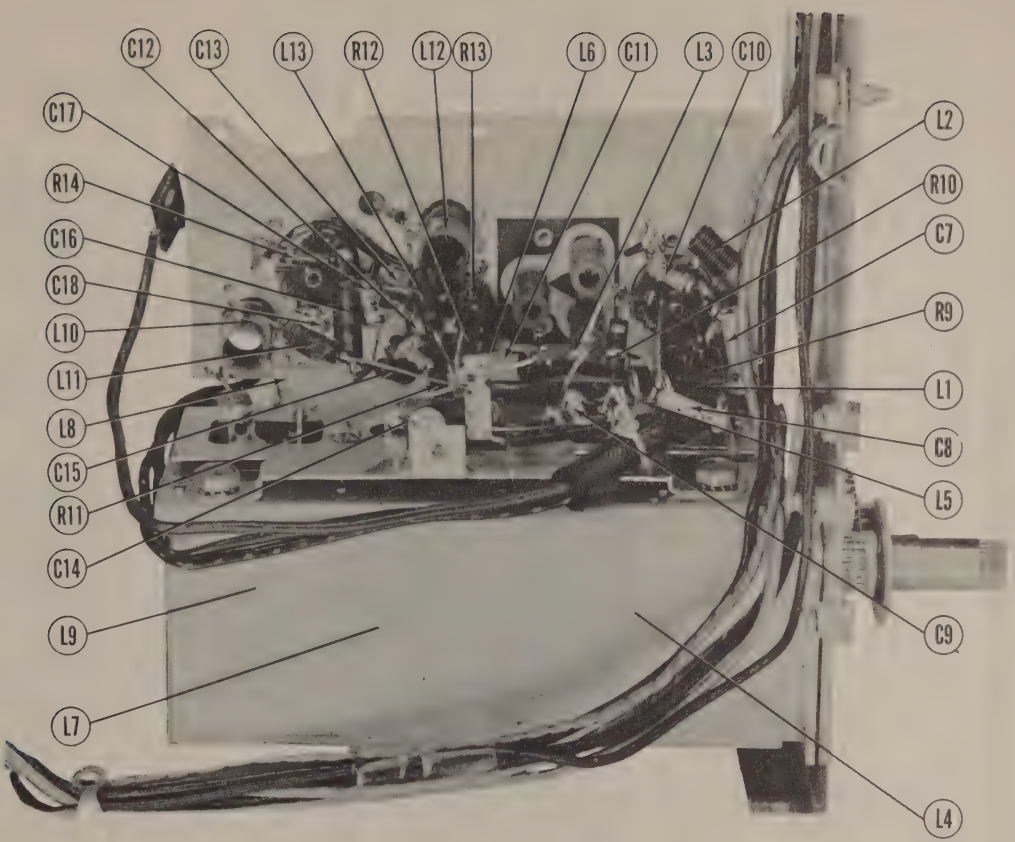


FIG. 2

FIG. 3



RF TUNER

DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Remove four cabinet plugs from face of cabinet.
3. Remove four phillips head screws from front of cabinet.
4. Remove two 1/4" hex head screws from bottom of chassis. Remove front cover.
5. Disconnect speaker.
6. Disconnect built-in antenna.
7. Remove four 7/16" hex head bolts from chassis. Remove chassis.
8. Remove two phillips head screws from speaker. Remove speaker.

NOTE: FOR PICTURE TUBE REMOVAL, IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AB4	125VDC	0V	0V	6.3VAC	6.3VAC	-.3VDC	0V		
V 2	6CB6	-2.4VDC	0V	0V	6.3VAC	125VDC	50VDC	0V		
V 3	6AB4	120VDC	0V	0V	6.3VAC	0V	§-6.2VDC	0V		
V 4	6AU6	-.3VDC 0V	0V	6.3VAC	0V	130VDC	130VDC	.4VDC		
V 5	6AU6	-.3VDC 0V	0V	6.3VAC	0V	125VDC	125VDC	.5VDC		
V 6	6AU6	0V	0V	6.3VAC	0V	120VDC	120VDC	.6VDC		
V 7	6AG5	0V	1.2VDC	6.3VAC	0V	115VDC	115VDC	1.2VDC		
V 8	6AL5	0V	-4.2VDC	6.3VAC	0V	-3.8VDC	0V	0V		
V 9	6AU6	-4VDC	0V	6.3VAC	0V	130VDC	240VDC	11VDC		
V 10	12AU7	7.8VDC	0V	1.1VDC	6.3VAC	6.3VAC	0V	0V	0V	0V
V 11	6AU6	-2.5 VDC 0V	0V	6.3VAC	0V	-30VDC -33VDC	135VDC	.6VDC 0V		
V 12	6AU6	#-.1VDC	#0V	#0V	#6.3VAC	#60VDC	#60VDC	#0V		
V 13	6T8	#-.6VDC	#-1VDC	#-.6VDC	#0V	#6.3VAC	#0V	#0V	#-.4VDC	#85VDC
V 14	6V6GT	0V	#6.3VAC	#160VDC	#175VDC	#-5VDC	0V	#0V	#0V	
V 15	6SL7GT	#-.3VDC	#150VDC	#0V	#-.8VDC	#195VDC	#1.4VDC	#6.3VAC	0V	
V 16	6C4	350VDC 130VDC	0V	0V	6.3VAC	350VDC 130VDC	-9VDC -10VDC	0V		
V 17	6V6GT	0V	6.3VAC	330VDC 300VDC	330VDC 300VDC	0V	0V	0V	35VDC 15VDC	
V 18	6SN7GT	-35VDC -60VDC	260VDC	0V	-1.6VDC -2.7VDC	175VDC 110VDC	-11VDC 3VDC	6.3VAC	0V	
V 19	6BG6G	270VDC	0V	6.8VDC	-17VDC	-17VDC	530VDC	6.3VAC	300VDC	TOP CAP *
V 20	6W4GT	290VDC	330VDC	530VDC	0V	330VDC	260VDC	¶	¶	
V 21	1X2	* DO NOT MEASURE								
V 22	5U4G	0V	370VDC	0V	330VAC	0V	330VAC	0V	370VDC	
V 23	5U4G	0V	370VDC	0V	330VAC	0V	330VAC	0V	370VDC	
V 24	14BP4	0V	2.6VDC	PIN 10 260VDC	PIN 75VDC	11 20VDC	PIN 12 6.3VAC			

FOCUS CONTROL COUNTER CLOCKWISE
§ TAKEN WITH VACUUM TUBE VOLTMETER
# MEASURED FROM PIN 8 OF V 14
¶ 6.3VAC MEASURED ACROSS FILAMENTS
* DO NOT MEASURE

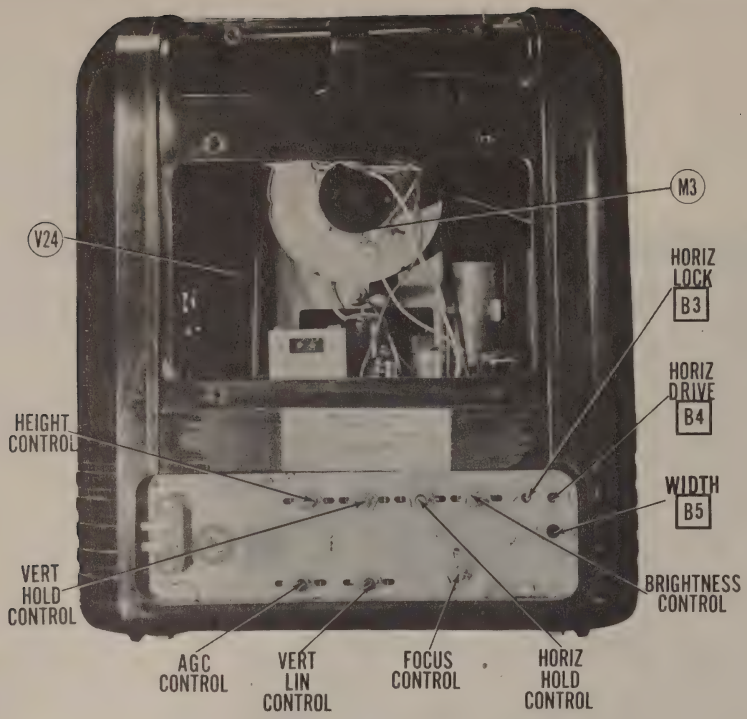
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AB4	#200Ω	Inf.	0Ω	.1Ω	.1Ω	480KΩ	0Ω		
V 2	6CB6	1Meg	0Ω	0Ω	.1Ω	#200Ω	#150KΩ	0Ω		
V 3	6AB4	#200Ω	Inf.	0Ω	.1Ω	Inf.	12KΩ	0Ω		
V 4	6AU6	33KΩ	0Ω	.1Ω	0Ω	#200Ω	#200Ω	68Ω		
V 5	6AU6	16KΩ	0Ω	.1Ω	0Ω	#300Ω	#300Ω	68Ω		
V 6	6AU6	6.8KΩ	0Ω	.1Ω	0Ω	#400Ω	#400Ω	68Ω		
V 7	6AG5	.3Ω	100Ω	.1Ω	0Ω	#500Ω	#500Ω	100Ω		
V 8	6AL5	0Ω	22Ω	.1Ω	0Ω	4.7KΩ	0Ω	260KΩ		
V 9	6AU6	4.7KΩ	0Ω	.1Ω	0Ω	#4.7KΩ	†82KΩ	2KΩ		
V 10	12AU7	47KΩ	0Ω	300KΩ	.1Ω	.1Ω	Inf.	Inf.	0Ω	0Ω
V 11	6AU6	105KΩ	0Ω	.1Ω	0Ω	90KΩ	#0Ω	1KΩ 0Ω		
V 12	6AU6	#47KΩ	#0Ω	#0Ω	#.3Ω	†20KΩ	†20KΩ	#0Ω		
V 13	6T8	Inf.	#18KΩ	Inf.	#0Ω	#.3Ω	#0Ω	#0Ω	#10Meg	†100KΩ
V 14	6V6GT	Inf.	#.3Ω	†950Ω	†590Ω	#100KΩ	Inf.	#0Ω	70KΩ	
V 15	6SL7GT	#1Meg	†18KΩ	#0Ω	#3.3Meg	†200Ω	#6.8KΩ	#.3Ω	#0Ω	
V 16	6C4	▲300KΩ ▲2.8Meg	Inf.	0Ω	.1Ω	▲300KΩ ▲2.8Meg	1.2Meg 2.7Meg	0Ω		
V 17	6V6GT	0Ω	.1Ω	†3.2KΩ	†3.2KΩ	2.2Meg	Inf.	0Ω	6KΩ 1KΩ	
V 18	6SN7GT	250KΩ	▲120KΩ	0Ω	800KΩ	▲130KΩ ▲140KΩ	300KΩ	.1Ω	0Ω	
V 19	6BG6G	▲310KΩ	0Ω	82Ω	1Meg	1Meg	▲0Ω	.1Ω	†2.9KΩ	TOP CAP ▲85Ω
V 20	6W4GT	†820KΩ	†200Ω	150KΩ	Inf.	†210Ω	▲270KΩ	Inf.	Inf.	
V 21	1X2	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP ▲10KΩ
V 22	5U4G	Inf.	35KΩ	Inf.	60Ω	Inf.	60Ω	Inf.	35KΩ	
V 23	5U4G	Inf.	35KΩ	Inf.	60Ω	Inf.	60Ω	0Ω	35KΩ	
V 24	14BP4	0Ω	220KΩ	PIN 10 †6.8KΩ	PIN 13KΩ	11 1.8KΩ	PIN 12 .1Ω			

FOCUS CONTROL COUNTER CLOCKWISE
MEASURED FROM PIN 8 OF V14
† MEASURED FROM PIN 2 OF V23
▲ MEASURED FROM PIN 3 OF V20

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold control to the mid-position of its range.

Adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

Connect the vertical input lead of an oscilloscope thru 10MMF to terminal 5 of L30.

Adjust the horizontal waveform slug (B2) until the broad and narrow peaks of the waveform on the scope are of equal height as shown in figure 4. If necessary during adjustment of B2, adjust B1 to keep the picture synchronized.

Turn the horizontal lock trimmer (B3) to MINIMUM capacity.

Turn the horizontal hold control to maximum clockwise.

Adjust B1 until the picture falls out of sync and shows one vertical or diagonal bar in the picture. Then back off B1 until the picture just falls into sync.

Turn the horizontal drive trimmer (B4) counter-clockwise to the point just below the point where crowding or vertical white lines appear in the picture.

Adjust the width slug (B5) until the picture fills the mask.

Adjust the horizontal linearity slug (B6) until the picture is symmetrical from left to right.

Slight readjustment of B4 may be required for optimum results.

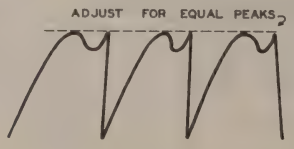
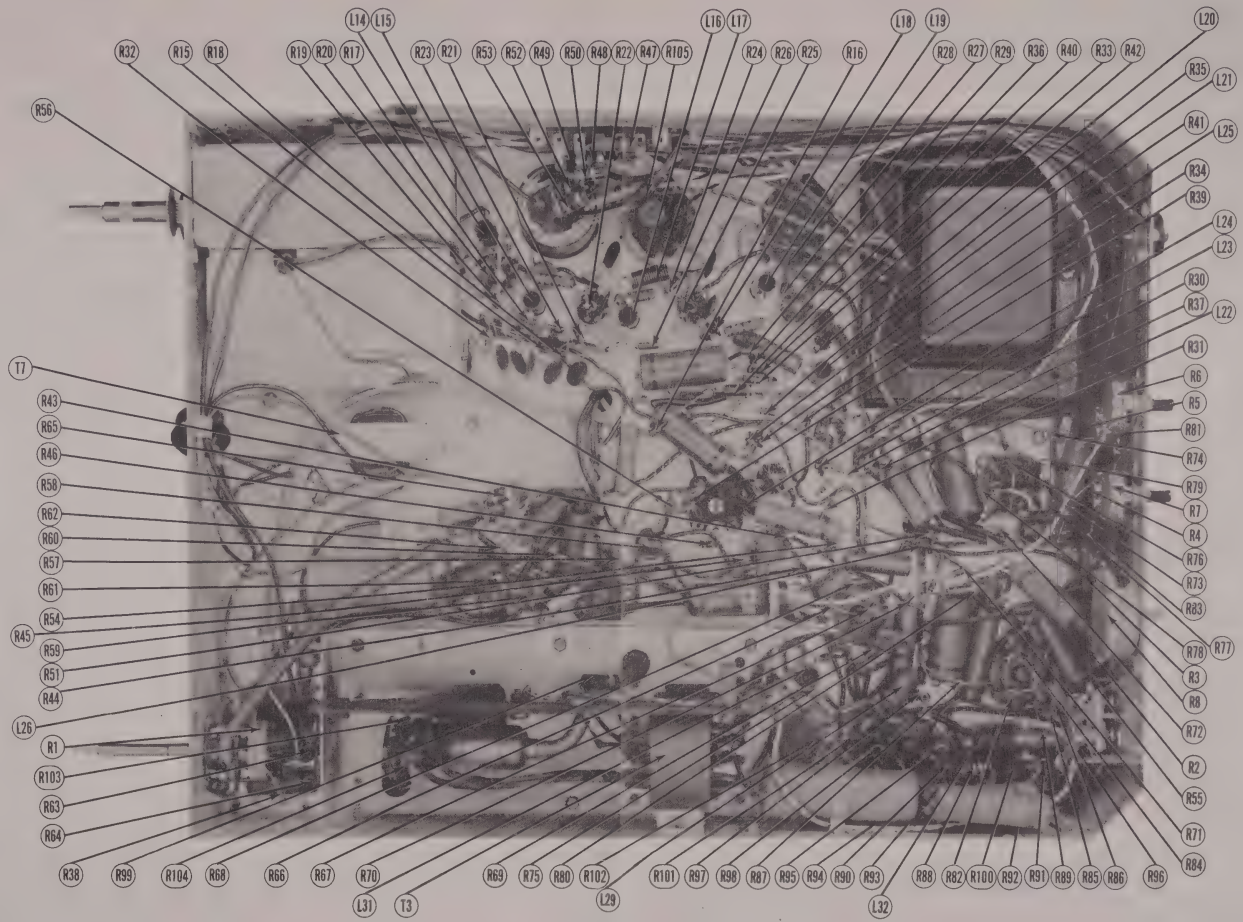


FIG. 4



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No	USE	REPLACEMENT DATA: CROSLEY PART No.	STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6AB4	6AB4	5CK	
V2	Mixer	6CB6	6CB6	6CK	
V3	Oscillator	6AB4	6AB4	5CK	
V4	1st Video If Amp.	6AU6	6AU6	7BK	
V5	2nd Video IF Amp.	6AU6	6AU6	7BK	
V6	3rd Video IF Amp.	6AU6	6AU6	7BK	
V7	4th Video IF Amp.	6AG5	6AG5	7BD	
V8	Video Detector - AGC Delay	6AL5	6AL5	6BT	
V9	Video Amplifier	6AU6	6AU6	7BK	
V10	DC Restorer	12AU7	12AU7	9A	
V11	AGC Keying	6AU6	6AU6	7BK	
V12	Sound IF Amp.	6AU6	6AU6	7BK	
V13	Ratio Detector - AF Amplifier	6T8	6T8	9E	
V14	Audio Output	6V6GT	6V6GT	7AC	
V15	Sync Separator - Sync. Amplifier	6SL7GT	6SL7GT	8BD	
V16	Vert. Oscillator	6C4	6C4	6BG	
V17	Vert. Output	6V6GT	6V6GT	7AC	
V18	Hor. AFC-Horiz. Oscillator	6SN7GT	6SN7GT	8BD	
V19	Horiz. Output	6BG6G	6BG6G	5BT	
V20	Damper	6W4GT	6W4GT	4CG	
V21	H. V. Rectifier	1X2	1X2	7CB	
V22	L. V. Rectifier	5U4G	5U4G	5T	
V23	L. V. Rectifier	5U4G	5U4G	5T	
V24	Picture Tube	14BP4	14BP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CROSLEY PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	475	B-147757	▲FAH882		UP445○			▲TVL-2430 = Filter
B	40	475		▲PRB315/500		▲BR8315A			▲TVA-1322 ■ Filter
C	500	10							▲ Filter
C2A	40	475	B-148429	▲FA8X81 ▲PR550/100		UPT303			▲TVL-2830 ▲ Filter ▲TVA-1310 ■ Filter
B	40	250							▲ Vert. Output Cathode
C	100	50							■ Decoupling
C3A	10	475	B-148556	AF222X		UPT318			▲TVL-3835 ▫ Vert. Output Dec. V. Amp. Screen
B	10	475							
C	350								
C4	10	25	B-147758	PR550/10					TVA-1204 Stabilizing Cap
C5	40	350	B-148725	PR540/40		BR4035			TVA-1811 Decoupling
C6	5	25	B-148944	PRB315/4		BR350			TVA-1203 Horiz. Output Cathode
C7	5000		C-137727-48	SI5000	D6-502		81L-005		29C1 AGC Filter
C8	5000		C-137727-38	SI1000	D6-102		GP2L-001		19C1 AGC Filter
C9	1000		C-137727-8	SI1000	D6-102		GP2L-001		19C1 RF Bypass
C10	470		C-137727-104	SI470	D6-471		GP2K-470		19C15 RF Amp. Fil.
C11	15		C-137727-107	SI15	TC2-15		GP1K-15		19C5 RF Coupling
C12	470		C-137727-104	SI470	D6-471		GP2K-470		19C15 Mixer Screen
C13	470		C-137727-104	SI470	D6-471		GP2K-470		19C15 Mixer Filament
C14	1000		C-137727-8	SI1000	D6-102		GP2L-001		19C1 RF Bypass
C15	9		W-137398-2		TC2-1				Osc. Coupling
C16	5		C-137727-103	SI5	TC2-4.7		NP0K-5		Osc. Grid Cap
C17	6		C-137727-106				N330K-6		Fixed Trimmer
C18	6		C-137727-105				N330K-4		Fixed Trimmer
C19	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005		29C1 AGC Filter
C20	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005		29C1 RF Bypass
C21	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005		29C1 RF Bypass
C22	100		C-137727-108	SI100	D6-101	5WST1	GP1K-100		19C11 IF Coupling
C23	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005		29C1 AGC F ilter
C24	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005		29C1 1st V. IF Dec.
C25	100		C-137727-108	SI100	D6-101	5WST1	GP1K-100		19C11 IF Coupling
C26	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005		29C1 AGC Filter
C27	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005		29C1 2nd V. IF Dec.
C28	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005		29C1 2nd V. IF Fil.
C29	100		C-137727-108	SI100	D6-101	5WST1	GP1K-100		19C11 IF Coupling
C30	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005		29C1 3rd V. IF Dec.
C31	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005		29C1 3rd V. IF Cathode
C32	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005		29C1 3rd V. IF Fil.
C33	100		C-137727-108	SI100	D6-101	5WST1	GP1K-100		19C11 IF Coupling
C34	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005		29C1 4th V. IF Dec.
C35	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005		29C1 4th V. IF Cath.
C36	100		C-137727-108	SI100	D6-101	5WST1	GP1K-100		19C11 IF Coupling
C37	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005		29C1 RF Bypass
C38	.05	200	39001-14			PTE8S15			8TM-S15 AGC Filter
C39	25	200	39001-87	P488-25		GT2P25			2TM-P25 AGC Filter
C40	5		C-137727-103	SI1NP0	TCC2-4.7	5WSV5	NP0K-5		19C5 Diode Filter
C41	.05	400	39001-17	P488-05		DF-503	PTE4S5		4TM-S5 Video Coupling
C42	.01	400	39001-19	P488-1		DF-104	PTE4S91		4TM-P1 Video Coupling
C43	1	200	39001-19	P288-1		DF-104	PTE4P1		2TM-P1 Picture Tube Cathode
C44	47		C-1337727-112	SI47		D6-470	5WS4S	GP1K-47	19C25 S. IF Coupling
C45	.01	400	39001-19	P488-02		DF-203	PTE4S2		4TM-S2 S. IF Decoupling
C46	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005		29C1 S. IF Decoupling
C47	2		B-137398-4		TCZ-2.2				Balancing
C48	5000		C-144675-2	BPD-005	DD-502	1D5D5	81L-005		29C1 RF Bypass
C49	1000		C-137727-110	SI1000	D6-102	1WSD1	GP2L-001		19C1 Diode Load Cap.
C50	.005	600	39001-11	P688-005		D6-502	PTE6D5		6TM-D5 De-emphasis
C51	.01	400	39001-13	P488-01		D6-103	PTE4S1		82I-01 4TM-S1 Audio Coupling
C52	.01	400	39001-13	P488-01		D6-103	PTE4S1		82I-01 4TM-S1 Audio Coupling
C53	.00025	600	39001-73	1468-00025		D6-251	5WS12S	GP2K-250	6TM-T25 AF Amp. Plate
C54	.02	400	39001-80	P488-02		DF-203	PTE4S2		4TM-S2 Audio Coupling
C55	.005	600	39001-11	P688-005		D6-502	PTE6D5	81L-005	6TM-D5 Output Screen
C56	.005	600	39001-11	P688-005		D6-502	PTE6D5	81L-005	6TM-D5 Output Plate
C57	.01	400	38477-41	P488-01		D6-103	PTE4S1	82I-01	4TM-S1 Sync. Coupling
C58	120	500	B-137498-17	SIL20		D6-121	5RS7T5	GP2K-120	19C29 Sync. Coupling
C59	390	500	B-137498-28	1469-0004		D6-391	5RS7T4	GP2K-390	M5-34 Sync. Amp. Cathode

PARTS LIST AND DESCRIPTIONS

CAPACITORS (CONT.)

ITEM No	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CROSLEY PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C60	.002	600	39001-74	P688-002		D6-202	PTE6D2	GP2M-002	6TM-D2 Integrator Net
C61	.005	600	39001-11	P688-005		D6-502	PTE6D5	81L-005	6TM-D5 Integrator Net
C62	.005	600	39001-11	P688-005		D6-502	PTE6D5	81L-005	6TM-D5 Integrator Net
C63	.0047	600	39478-39	P688-0047		D6-472	PTE6D5	GP2M-0047	6TM-D47 Vert. Osc. Grid
C64	.05	400	C-146634-6	P488-05		DF-503	PTE4S5		4TM-S5 Vertical Discharge
C65	.1	400	39001-19	P488-1		DF-104	PTE4P1		4TM-P1 Vert. Sweep Coupling
C66	.005	600	39001-11	P688-005		D6-502	PTE6D5	81L-005	6TM-D5 Vert. Output Dec.
C67	180	500	B-137498-24	SIL80		D6-181	5RS7T2	GP2K-180	M5-32 Horiz. Sync. Coupling
C68	.0022	600	39477-37	P688-0022		D6-222	PTE6D2	GP2M-0022	6TM-D22 Horiz. Sync. Coupling
C69	.25	200	39001-87	P488-25			GT2P25		2TM-P25 AFC Filter
C70	.02	200	39001-80	P488-02		DF-203	PTE4S2		2TM-S2 AFC Filter
C71	.05	400	39001-17	P488-05		DF-503	PTE4S5		4TM-S5 Hor. AFC Plate
C72	200	1000	B-137498-47	1468-HV-0003					Hor. Osc. Grid
C73	.01	400	C-148813-1	P488-01		D6-103	PTE4S1		4TM-S1 Fixed Trimmer
C74	90	500	B-137498-54	1469-0005		TCZ-.82	5RS7T	NP0M-001	M5-31 Voltage Divider
C75	5		C-137727-103	SI5		TCZ-4.7	5WS5Y5	GP1K-5	M5-55 Horiz. Feedback
C76	1300	500	B-137496-53						Horiz. Discharge
C77	820	500	B-137498-56				1W5T8		M3-38 Horiz. Sweep Coupling
C78	.1	600	39001-19	P688-1		DF-104	PTE6P1		6TM-P1 Decoupling
C79	.5	600	39481-7	686-5			GT6P5		Decoupling
C80	.05	200	39001-17	P288-05		DF-503	PTE4S5		2TM-S5 Horiz. Output Screen
C81	.05	400	C-146634-8	P488-05			PTE4S5		4TM-S5 Damper Filter
C82	.1	400	C-146634-3	P488-1			PTE4P1		4TM-P1 Damper Filter
C83	.5	200	B-144899-2	P288-5			GT2P5		Horiz. Sweep Coupling
C84	390	1500	B-137498-55	1469-HV-0004					Fixed Trimmer
C85	500	20000	W-147375	HV20B		TV1-502			H. V. Filter
C86	5000		B-144675-3	HPD-005		DD-502	1D5D5	81L-005	29C1 RF Bypass
C87	220	1500	W-146011	1469-HV-0002					Line Filter
C88	220	1500	W-146011	1469-HV-0002					Line Filter

CONTROLS

ITEM No	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg	½	C-148098 ◇	Consult IRC			Volume Control - Front
B	2000Ω	½		B11-137 *			Contrast Control - Rear
C	Shaft End			B11-112 *	RTV-55	SBB-638-8	Attach Per Instructions In "Concentrikit"
D	Switch			E-187 *			Attach Per Instructions In "Concentrikit"
R2A	40KΩ	½	B-148798	76-1 *			Brightness Control
B	Shaft		Not req.	Not req.	AG-43-S	AN-31	Attach to R2A Per Instructions
R3A	50KΩ	½	B-148797	Q11-123	FK8-1/4	AK-1	Horizontal Hold Control
B	Shaft		Not req.	Not req.	AG-44-S	AN-31	Attach to R3A Per Instructions
R4A	1.5Meg	½	B-148238	Q11-138	FK8-1/4	AK-1	Vertical Hold Control
B	Shaft		Not req.	Not req.	AG-83-S	AN-75	Attach to R4A Per Instructions
R5A	2.5Meg	½	B-148237	Q11-139	FK8-1/4	AK-1	Height Control
B	Shaft		Not req.	Not req.	AG-84-S	AN-83	Attach to R5A Per Instructions
R8A	1000Ω	½	B-148038	Q11-108	FK8-1/4	AK-1	AGC Control
B	Shaft		Not req.	Not req.	AG-8-S	AN-5	Attach to R8A Per Instructions
R7A	2000Ω	½	B-148283	Q11-114	FK8-1/4	AK-1	Vertical Linearity Control
B	Shaft		Not req.	Not req.	AG-16-S	AN-10	Attach to R7A Per Instructions
R8	1500Ω	4	B-147079	RTV-6	FK8-1/4	AK-1	Focus Control - Wire Wound

◇ Additional parts to be used in "Concentrikit".

RESISTORS

ITEM No	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R9	220KΩ	½	39374-53	BTS-220K	AGC Network
R10	390Ω	½	39374-32	BTS-390	RF Coil Shunt
R11	1Meg	½	39374-61		Mixer Grid
R12	150KΩ	½	39374-51	BTS-150K	Mixer Screen
R13	10KΩ	½	39374-37		Mixer Plate Coil Shunt
R14	12KΩ	½	39374-38		Osc. Grid
R15	100Ω 20%	½	39373-14	BTS-100	Decoupling
R16	100Ω 20%	½	39373-14	BTS-100	Decoupling
R17	100Ω 20%	½	39373-14	BTS-100	Decoupling
R18	100KΩ 20%	½	39374-54	BTS-100K	AGC Network
R19	15KΩ 5%	½	39375-77		1st Video IF Amp. Grid
R20	68Ω	½	39374-11		1st Video IF Amp. Cathode
R21	8200Ω 5%	½	39375-71		2nd Video IF Amp. Grid
R22	68Ω	½	39374-11		2nd Video IF Amp. Cathode
R23	100Ω 20%	½	39373-14	BTS-100	Decoupling
R24	8800Ω 5%	½	39375-69		3rd Video IF Amp. Grid
R25	68Ω	½	39374-11		3rd Video IF Amp. Cathode
R26	100Ω 20%	½	39373-14	BTS-100	Decoupling
R27	10KΩ 5%	½	39375-73		4th Video Transformer Shunt
R28	100Ω	½	39374-13	BTS-100	4th Video IF Amp. Cathode
R29	100Ω 20%	½	39373-14	BTS-100	4th Video IF Amp. Decoupling
R30	47000Ω 5%	½	39375-65	BTS-4700-5%	Video Det. Diode Load
R31	100KΩ	½	39374-49	BTS-100K	AGC Keying Grid
R32	560Ω	½	39374-23	BTS-560	AGC Network
R33	1000Ω	½	39374-25	BTS-1000	AGC Filter
R34	330KΩ 5%	½	39375-109	BTS-330K-5%	AGC Network
R35	82KΩ 5%	½	39375-95	BTS-82K-5%	AGC Network
R36	8200Ω 5%	½	39375-71	BTS-8200-5%	AGC Network
R37	560KΩ 5%	½	39375-58	BTS-560K-5%	AGC Delay Plate
R38	47Ω	2	39374-9	BW-½-47	Video Amp. Cathode
R39	82KΩ	2	39374-224	BTS-82K	Video Amp. Screen
R40	4700Ω 5%	1	39375-213	BTS-4700-5%	Video Amp. Plate
R41	68000Ω	½	39374-35	BTS-6800	Video Peaking Coil Shunt
R42	33000Ω	½	39374-31	BTS-3300	Isolation
R43	180KΩ	½	39374-52	BTS-180K	DC Restorer Diode Load
R44	120KΩ	½	39374-50	BTS-120K	DC Restorer Diode Load
R45	47KΩ	½	39374-45	BTS-47K	DC Restorer Diode Load
R46	820KΩ	½	39374-80	BTS-820K	Voltage Divider
R47	680MΩ	1	39374-123	BTA-6800	Voltage Divider
R48	47KΩ	2	39374-221	BTS-47K	Voltage Divider
R49	39KΩ	2	39374-220	BTS-39K	Voltage Divider
R50	6800Ω	1	39374-123	BTA-6800	Brightness Control Shunt

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	IRC PART No.	IDENTIFICATION CODES
R51	100Ω	½	39374-28	BTS-1000	Video Peaking Coil Shunt
R52	47Ω	2	39374-197	BTS-470	Focus Coil Shunt
R53	47Ω	2	39374-197	BTS-470	Focus Coil Shunt
R54	100KΩ	½	39374-49	BTS-100K	Picture Tube Grid
R55	1800Ω	½	39374-33	BTS-1800	Picture Tube Cathode
R56	47KΩ	½	39374-45	BTS-47K	Sound IF Amp. Grid
R57	27KΩ	1	39374-130	BTA-27K	Sound IF Amp. Decoupling
R58	47KΩ	½	39374-45	BTS-47K	Voltage Divider
R59	18KΩ 5%	½	39375-79	BTS-18K-5%	Ratio Det. Diode Load
R60	27KΩ	½	39374-47	BTS-27K	De-emphasis
R61	10Meg	½	39373-107	BTS-10Meg	AF Amp. Grid
R62	100KΩ	½	39374-49	BTS-100K	AF Amp. Plate
R63	100KΩ 5%	½	39375-97	BTS-100K-5%	Output Grid
R64	2.2Meg 5%	½	39375-129	BTS-2.2Meg-5%	Bias Network
R65	390Ω	½	39374-198	BTS-390	Decoupling
R66	1Meg	½	39374-61	BTS-1Meg	Sync. Sep. Grid
R67	18KΩ	½	39374-40	BTS-18K	Sync. Sep. Plate
R68	3.3Meg 20%	½	39373-100	BTS-3.3Meg	Sync. Amp. Grid
R69	6800Ω	½	39374-35	BTS-6800	Sync. Amp. Cathode
R70	12KΩ	½	39374-41	BTS-22K	Integrator
R71	8200Ω	½	39374-36	BTS-8200	Integrator
R72	8200Ω	½	39374-36	BTS-8200	Integrator
R73	1.2Meg	½	39374-63	BTS-1.2Meg	Vertical Osc. Grid
R74	220KΩ	½	39374-53	BTS-220K	Vertical Osc. Plate
R75	82KΩ	½	39374-48	BTS-82K	Vertical Osc. Plate Decoupling
R76	10KΩ 20%	½	39373-54	BTS-10K	Vertical Osc. Transformer Shunt
R77	820Ω	½	39374-30	BTS-8200	Vertical Peaking
R78	2.2Meg	½	39374-66	BTS-2.2Meg	Vertical Output Grid
R79	1000Ω 20%	½	39373-33	BTS-1000	Vertical Output Cathode
R80	2200Ω	1	39374-117	BTA-2200	Vertical Output Decoupling
R81	270KΩ	1	39374-142	BTA-270K	Voltage Divider
R82	2.7Meg	½	39374-71	BTS-2.7Meg	Voltage Divider
R83	68KΩ	½	39374-47	BTS-68K	Voltage Divider
R84	820KΩ	½	39374-80	BTS-820K	Horizontal AFC Grid
R85	150KΩ	½	39374-51	BTS-150K	Horizontal AFC Cathode
R86	150KΩ	½	39374-51	BTS-150K	Horizontal AFC Cathode
R87	8200Ω	½	39374-36	BTS-8200	Horizontal AFC Filter
R88	150KΩ	1	39374-139	BTA-150K	Horizontal AFC Plate
R89	100KΩ 5%	½	39375-97	BTS-100K-5%	Horizontal Osc. Grid
R90	150KΩ	1	39374-137	BTA-150K	Horizontal Osc. Plate
R91	39KΩ	½	39374-37	BTS-10K	Horizontal Osc. Transformer Shunt
R92	22KΩ	1	39374-41	BTS-22K	Horizontal Osc. Transformer Shunt
R93	1.5Ω			BTA-1R5	Decoupling
R94	1000Ω	1	39374-25	BTS-1000	Decoupling
R95	470		39374-9		Parasitic Suppressor
R96	1Meg	½	39374-61	BTS-1Meg	Horizontal Output Grid
R97	82Ω	1	39374-100	BW-1-82	Horizontal Output Cathode
R98	27000Ω	1	39374-118	BTA-27K	Horizontal Output Screen
R99	10Ω	2	39374-225	BTS-10R	Current Limiting
R100	150KΩ	1	39374-51	BTS-150K	Horizontal Feedback Network
R101	39KΩ	5%	39374-44	BTS-39K-5%	Horizontal Feedback Network
R102	82KΩ	½	39374-80	BTS-820K	Horizontal Feedback Network
R103	1.5Ω		39303-17		H. V. Rectifier Filament
R104	1Meg 20%	½	39374-149		H. V. Filter
R105	22Ω	1	39374-92	BW-1-22	Bias Network

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: CROSLEY PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC @ 1.8A	740VCT .180ADC	5VAC ⑤ 6A	6.3VAC	C147504			
			SEC. 4 6.3VAC ⑤ 1.5A	SEC. 5 6.3VAC ⑤ 6A				

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI	RATING: SEC.	REPLACEMENT DATA: CROSLEY PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	176Ω	720Ω	B-146642-1	A-8111	A-3000	TB0-1	Vertical Block Osc.
T3	66Ω	120Ω	AC-148761				Horizontal Output
		SEC. 2 1.22Ω					
		SEC. 3 8.3Ω Tap 4.3Ω					
		SEC. 4 0Ω					
T4	860Ω		B-148296	A-8123	A-3037	TB0-3 ①	Vertical Output
T5A	14Ω	Tap 14Ω	AC-148887-3	DY-7	MD-70F		Horizontal Deflection Coil
B	86Ω						Vertical Deflection Coil
T6	510Ω		AB-148781				Focus Coil

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: CROSLEY PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T7	5.4KΩ	4.3Ω	360Ω	.6Ω	B-142890	A-3849	A-3019	R0-9 ①	① Drill new mounting hole.

PARTS LIST CONTINUED ON PAGE 15

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	CROSLEY PART No.	JENSEN PART No.	QUAM PART No.	
SP1	50Ω	4.3Ω	AD-146538		69E505	
	CONE DIA.	V. C. DIA.				
SP2	4"X6"	9/16"				

COILS (RF-IF)

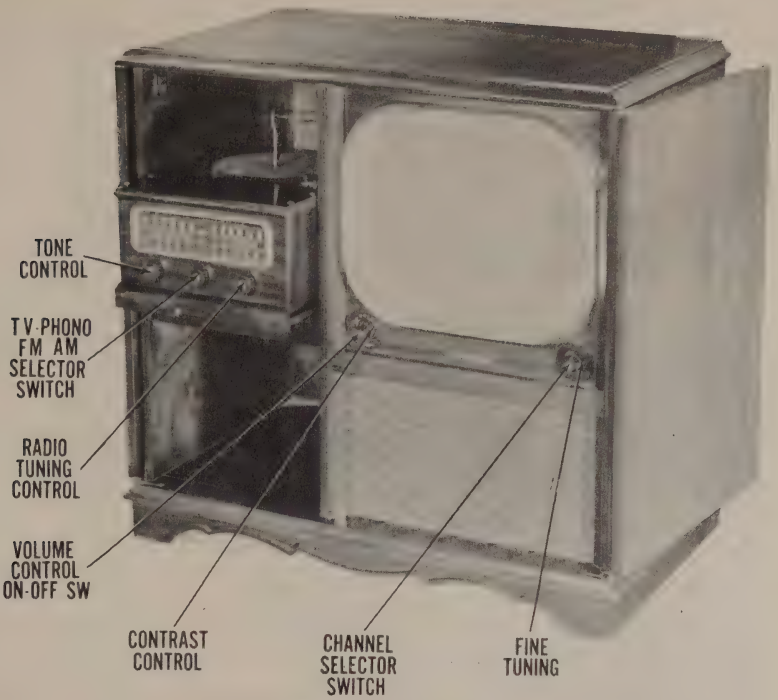
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	CROSLEY PART No.	MEISSNER PART No.	
L1	Ant. Coil	0Ω		AW-146735		
L2	Fil. Choke	0Ω		AW-146858		
L3	RF End Inductor	0Ω		AW-146985		Part of Tuner Part # D-146656
L4	RF Coil	0Ω				
L5	RF Coupling	0Ω		AW-146988		
L6	Mixer Grid End Inductor	0Ω		AW-146987		
L7	Mixer Grid Coil	0Ω				Part of Tuner Part # D-146656
L8	Osc. End Inductor	0Ω		AW-146986		
L9	Osc. Coil	0Ω				Part of Tuner Part # D-146656
L10	Osc. Coil Shunt	0Ω		AW-146753		
L11	RF Choke	.1Ω		AW-147015		
L12	1st Video IF	1.1Ω		AW-146755		
L13	RF Choke	.1Ω		AW-146735		
L14	1st Video IF Coupling	.3Ω		AW-146763		Green Dot
L15	2nd Video IF	.3Ω		AW-146563		Yellow Dot
L16	3rd Video IF	.3Ω		AW-146583		Red Dot
L17	Fil. Choke	0Ω		AW-146855		
L18	RF Choke	4.5Ω		AW-146570		White Dot
L19	4th Video IF	.3Ω		AW-146582		Yellow Dot
L20	RF Choke	4.5Ω		AW-146570		White Dot
L21	5th Video IF	.3Ω		AW-147023		Orange Dot
L22	Peaking	10Ω		AW-146889		
L23	Peaking			AW-147993		Wound on 3.9KΩ Resistor
L24	Peaking	10Ω		AW-147043		Wound on 22KΩ Resistor
L25	Peaking	10Ω		AW-146889		
L26	RF Choke	4.5Ω		AW-146570		White Dot
L27	Sound IF	2.7Ω	2.4Ω	AC-146782		
L28	Ratio Det. Trans.	4.2Ω	.2Ω	C-146874		
L29	Delay Coil	130Ω		AW-146440		
L30	Horiz. Osc. Coil	138Ω	35Ω	AC-146698		
L31	Horiz. Lin.	16Ω		AW-147482		
L32	Width Coil	40Ω		AW-147611		

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			CROSLEY PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M1	3AG	.250	W145780		318.250		

MISCELLANEOUS

ITEM No.	PART NAME	CROSLEY PART No.	NOTES
M2	RF Tuner	AW-146164	Complete Assembly
M3	Ion Trap	B-146484	
B3, B4	Trimmer	B-132386-18	Two Sections (Horiz. Lock 10-160MMF), (Horiz. Drive 80-400MMF)
	Safety Glass	R-146900	
	Indicator	W-147525	Tuning
	Dial	C-146482-1	Tuning
	Dial	C-146481-1	Volume
	Knob	AW-147889	Tuning
	Knob	AW-147888	Volume
	Knob	AW-144887	Contrast



PACKARD-BELL MODEL 2803TV

TRADE NAME	Packard - Bell Model 2803TV	
MANUFACTURER	Packard - Bell Co., 12333 W. Olympic Blvd., Los Angeles, Calif.	
TYPE SET	TV-AM-FM-Phono Combination Receiver	
TUBES	Twenty Eight	
POWER SUPPLY	110-120 Volts AC - 60 Cycle	RATING (TV) 1.9 Amp. @ 117 Volts AC
TUNING RANGE	(TV) Channels 2 thru 13	(Radio) ,8 Amp. @ 117 Volts AC
	(FM) 88-108MC	
	(AM) 540-1620KC	

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RECORD CHANGER UNIT - WEBSTER MODEL 100

HOWARD W. SAMS & CO., INC. • Indianapolis 1, Indiana

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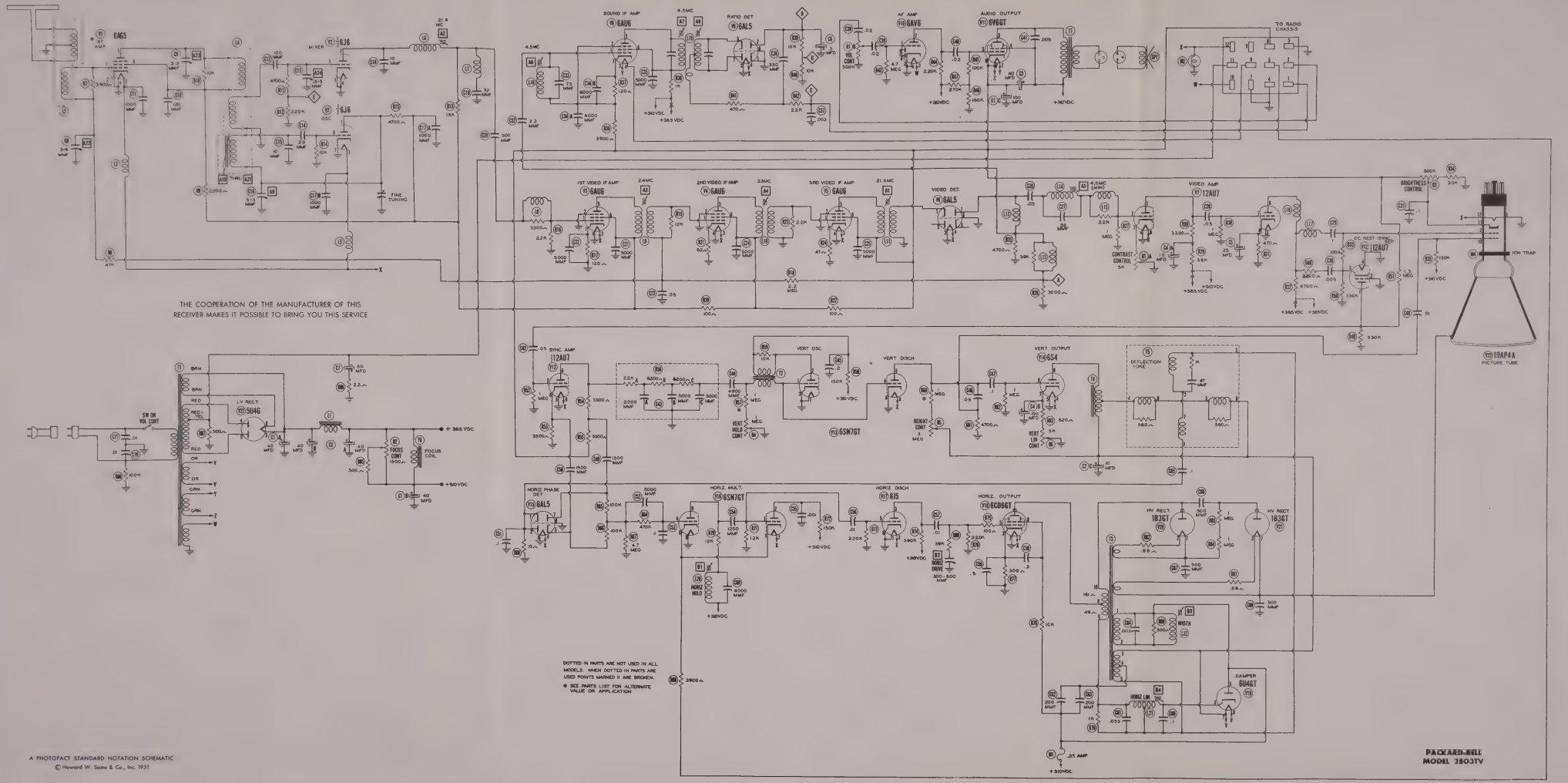
PACKARD-BELL
MODEL 2803TV


THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN.
⊕ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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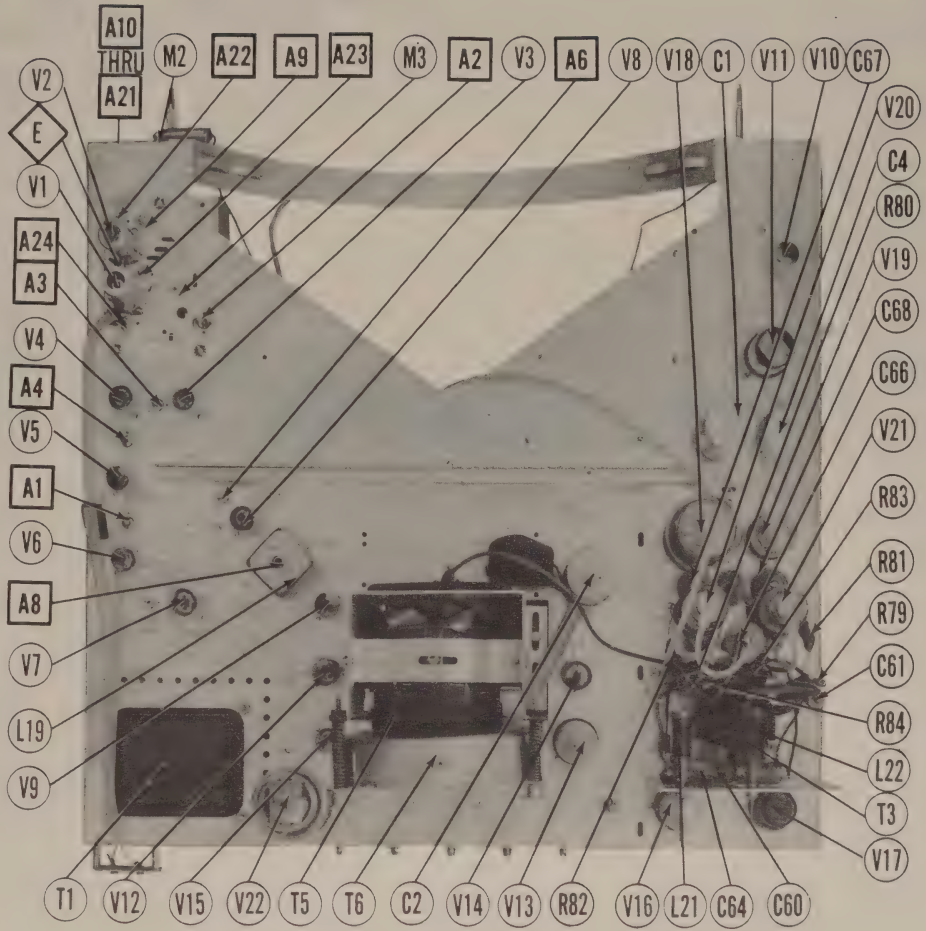
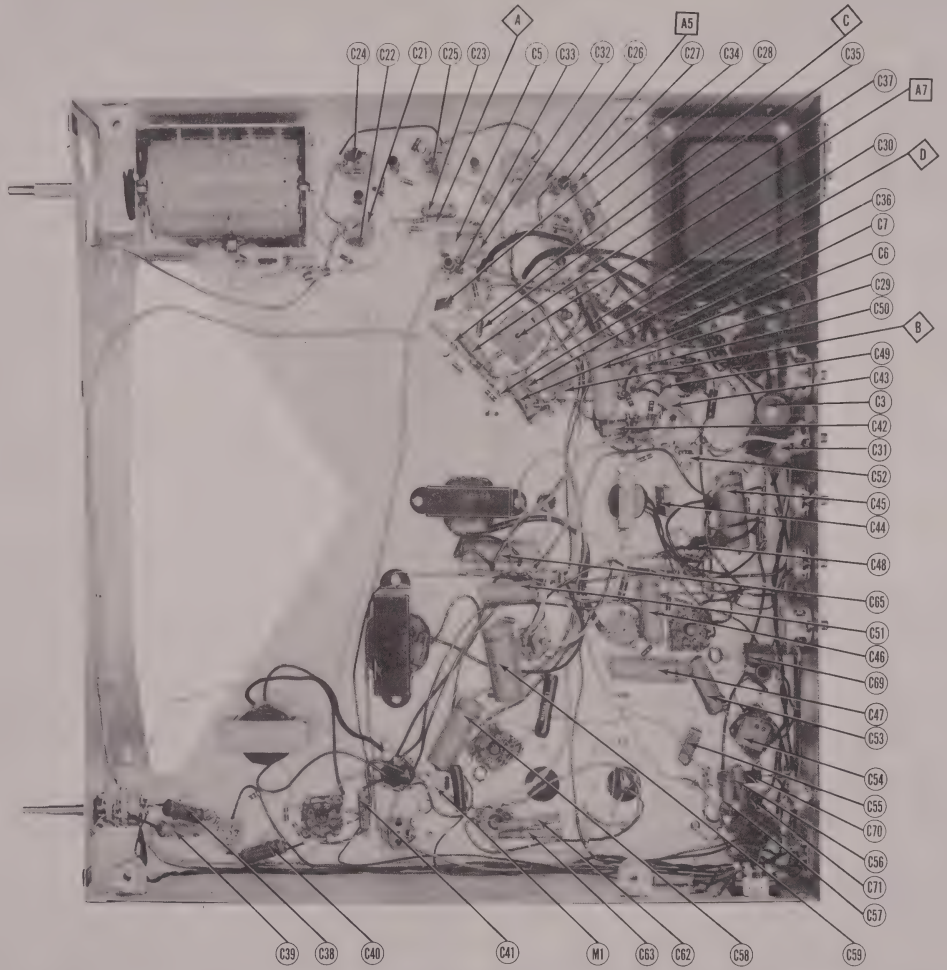
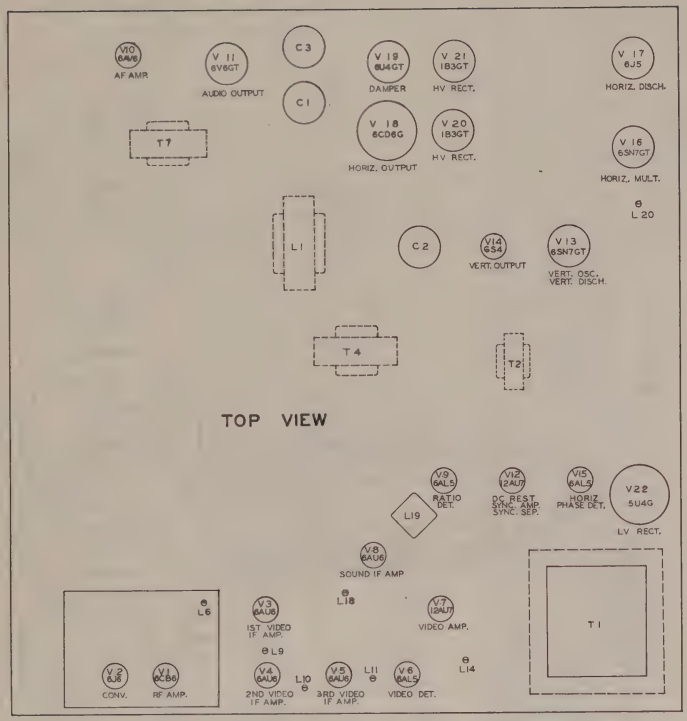
PACKARD-BELL MODEL 2803TV

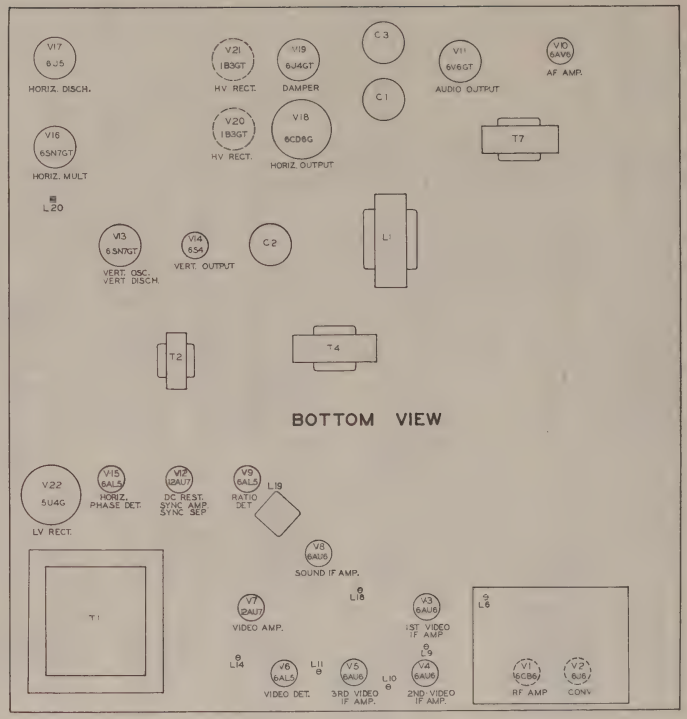


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

PACKARD-BELL
MODEL 2803TV

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal discharge tube (V17) from its socket.

VIDEO IF ALIGNMENT

To prevent the possibility of erroneous indications caused by the local oscillator, remove the converter tube (V2) and replace it with a 6J6 which has pin 1 removed.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an unground-ed tube shield floating over dummy converter tube (V2). Low side to chassis.	21.8MC (Unmod.)	Any	DC probe to Point ◇4 Common to chassis.	A1, A2	Adjust for maximum deflection.
2.	"	"	24MC	"	"	A3	"
3.	"	"	23MC	"	"	A4	"

OVERALL VIDEO IF RESPONSE CHECK

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	Direct	High side to an unground-ed tube shield floating over dummy converter tube (V2). Low side to chassis.	33MC (10MC SWP)	20.5MC 21.8MC 25.0MC	Any	Vert. amp. to Point ◇4 Low side to chassis.		Check for response similar to figure 1. If necessary retouch A1 thru A4 for proper response. If set is to be operated in a "fringe" area retouch A1 thru A4 for response similar to figure 1A.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5.	.005MFD	High side to Point A . Low side to chassis.	4.5MC (Unmod.)	Any	DC probe thru detect-or (fig. 3) to pin 2 of picture tube. Common to chassis.	A5	Adjust for MINIMUM deflection.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	.005MFD	High side to Point A . Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to Point ◇3, Common to chassis.	A6, A7	Adjust for maximum deflection.
7.	"	"	"	"	DC probe to Point ◇3, Common to Point ◇1.	A8	Adjust for zero reading. A positive and negative read-ing will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 % modulation and 450KC sweep. Use 120 % sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	.005MFD	High side to Point A . Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. amp. to Point ◇3. Low side to chassis.	A6, A7	Disconnect stabilizer capacitor C6. Adjust for maximum amplitude and symmetry as per figure 3.
9.	"	"	"	"	"	Vert. amp. to Point ◇3 Low side to chassis.	A8	Reconnect capacitor C6. Adjust A8 so 4.5MC occurs at center of crossover lines as per figure 4. SLIGHTLY retouch A7 for maximum amplitude and straightness of cross over lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.

Complete oscillator alignment may not be necessary.

If the oscillator seems to be off frequency approximately the same amount for a majority of the channels, it may be possible to correct them in one step using A9. It should be noted that this is an all channels oscillator circuit adjustment and should not be adjusted for any individual channel. If adjustment of A9 will not bring all channels within the range of the fine tuning control, it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel strip adjustments are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.

The sweep generator output lead should be terminated with its characteristic impedance, usually 90 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. amp. to Point ◇3 Low side to chassis.	A10	Adjust to place sound marker as shown in figure 5. The video marker should be at 50%.
			207MC (10MC SWP)	205.25MC 209.75MC	12		A11	
			201MC (10MC SWP)	199.25MC 203.75MC	11		A12	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A13	
			189MC (10MC SWP)	187.25MC 191.75MC	9		A14	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A15	
			177MC (10MC SWP)	175.25MC 179.75MC	7		A16	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A17	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A18	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A19	
			63MC (10MC SWP)	61.25MC 65.75MC	3		A20	
			57MC (10MC SWP)	55.25MC 59.75MC	2		A21	

FIG. 1

FIG. 1A

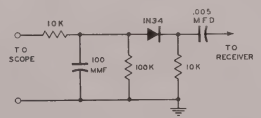


FIG. 2

FIG. 3

FIG. 4

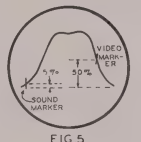


FIG. 5

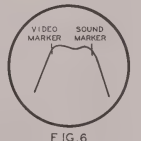


FIG. 6

TV ALIGNMENT INSTRUCTIONS (CONT.)

RF ALIGNMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC SWP)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to Point ◇3. Low side to chassis.	A22, A23, A24	Adjust for response curve similar to figure 6 with markers above 90%.
10.	"	"	213MC (10MC SWP)	211.25MC 215.75MC	13	"		Check for response curve similar to figure 6. If markers fall below 70% on any channel, make slight adjustment of A22, A23 and A24 with channel switch set for that channel. Re-check all channels to see that they have not been seriously effected.
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			177MC (10MC SWP)	175.25MC 179.75MC	7			
			85MC (10MC SWP)	83.25MC 87.75MC	6			
			79MC (10MC SWP)	77.25MC 81.75MC	5			
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

RADIO ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointers, turn tuning gang fully closed and set both pointers to the last reference mark at the low frequency end of their respective dial scales.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
11.	.1MFD	High side to pin 7 (grid) of 6BE6 (V25). Low side to chassis.	455KC (400 % Mod.)	AM (third pos. CW)	Tuning gang fully open	Across voice coil.	A25, A26, A27, A28	Adjust for maximum output.
12.		Loop	1620KC	"	"	"	A29	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
13.		Loop	1400KC	"	Tune for max. output.	"	A30	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
14.	.005MFD	High side to pin 1 (grid) of 6BA6 (V26). Low side to chassis.	10.7MC (Unmod.)	FM (max. CW)	Tuning gang fully closed.	DC probe to Point ◇3. Common to chassis.	A31, A32, A33	Adjust for maximum deflection.
15.	"	High side to pin 2 (grid) of 12AT7 (V24). Low side to chassis.	"	"	"	"	A34, A35	"
16.	"	"	"	"	"	DC probe to Point ◇3. Common to Point ◇1.	A36	Adjust for zero reading. A positive and nega-tive reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 % modulation and 450KC sweep. Use 120 % sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
14.	.005MFD	High side to pin 1 (grid) of 6BA6 (V26). Low side to chassis.	10.7MC (450KC SWP)	FM (max. CW)	Point of non-interference	Vert. amp. to Point ◇3. Low side to chassis.	A31, A32, A33	Disconnect stabilizer capacitor C72. Adjust for maximum amplitude and symmetry as per figure 7.
15.	"	High side to pin 2 (grid) of 12AT7 (V24). Low side to chassis.	"	"	"	"	A34, A35	"
16.	"	"	"	"	"	Vert. amp. to Point ◇3. Low side to chassis.	A36	Reconnect capacitor C72. Adjust A36 so 10.7 MC occurs at center of crossover lines as per figure 8. SLIGHTLY retouch A35 for max. amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
17.	300Ω carbon resistor	High side to ungrounded FM antenna terminal. Low side to chassis.	108MC (Unmod.)	FM	108MC	DC probe to Point ◇3. Common to chassis.	A37, A38	Adjust for maximum deflection.
18.	"	"	90MC	"	90MC	"	L25, L26	Check coils with a tuning wand. If necessary expand or compress coil turns for maximum deflection. If coils are changed repeat steps 17 and 18 until no further improvement can be made.

FIG. 7

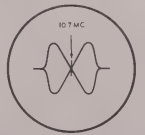


FIG. 8

PACKARD-BELL MODEL 2803TV

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	-.6VDC	0V	6.3VAC	0V	95VDC	95VDC	0V		
V 2	6J6	85VDC	80VDC	6.3VAC	0V	-1.1VDC	§-3.9VDC	0V		
V 3	6AU6	0V	0V	6.3VAC	0V	130VDC	130VDC	1 VDC		
V 4	6AU6	-.4VDC	0V	6.3VAC	0V	135VDC	135VDC	.4VDC		
V 5	6AU6	0V	0V	6.3VAC	0V	140VDC	140VDC	.6VDC		
V 6	6AL5	0V	0V	0V	6.3VAC	0V	0V	-.3VDC		
V 7	12AU7	210VDC	0V	11VDC	0V	0V	300VDC	0V	7.4VDC	6.3VAC
V 8	6AU6	#40VDC	#40VDC	#6.3VAC	#0V	#220VDC	#220VDC	#42VDC		
V 9	6AL5	0V	-.6VDC	0V	6.3VAC	-.3VDC	0V	-.3VDC		
V 10	6AV6	-.4VDC	0V	6.3VAC	0V	0V	0V	100VDC		
V 11	6V6GT	0V	#6.3VAC	#145VDC	#165VDC	#-6VDC	#-6.4VDC	#0V	#0V	
V 12	12AU7	18VDC	0V	2.2VDC	0V	0V	125VDC	0V	6VDC	6.3VAC
V 13	6SN7GT	-75VDC	250VDC	0V	-75VDC	190VDC 65VDC	0V	0V	6.3VAC	
V 14	6S4	0V	40VDC 15VDC	0V	6.3VAC	0V	0V	0V	0V	440VDC 400VDC
V 15	6AL5	0V	0V	0V	6.3VAC	3.6VDC	0V	-3.6VDC		
V 16	6SN7GT	0V	160VDC	14VDC	0V	275VDC	14VDC	6.3VAC	0V	
V 17	6J5	0V	6.3VAC	80VDC	0V	-11VDC	0V	0V	0V	
V 18	6CD6G	0V	6.3VAC	35VDC	0V	0V	0V	0V	165VDC	TOP CAP *
V 19	6U4GT	0V	0V	460VDC	0V	310VDC	0V	455VDC	455VDC	
V 20	1B3GT	* DO NOT MEASURE								
V 21	1B3GT	* DO NOT MEASURE								
V 22	5U4G	0V	390VDC	0V	370VAC	0V	370VAC	0V	390VDC	
V 23	19AP4A	0V	1.5VDC	PIN 10 310VDC	PIN 140VDC	11 9.5VDC	PIN 12 6.3VAC			

FUNCTION SWITCH IN TV POSITION
FOCUS CONTROL COUNTER CLOCKWISE
§ TAKEN WITH VACUUM TUBE VOLTMETER
# MEASURED FROM PIN 8 OF V11
* DO NOT MEASURE

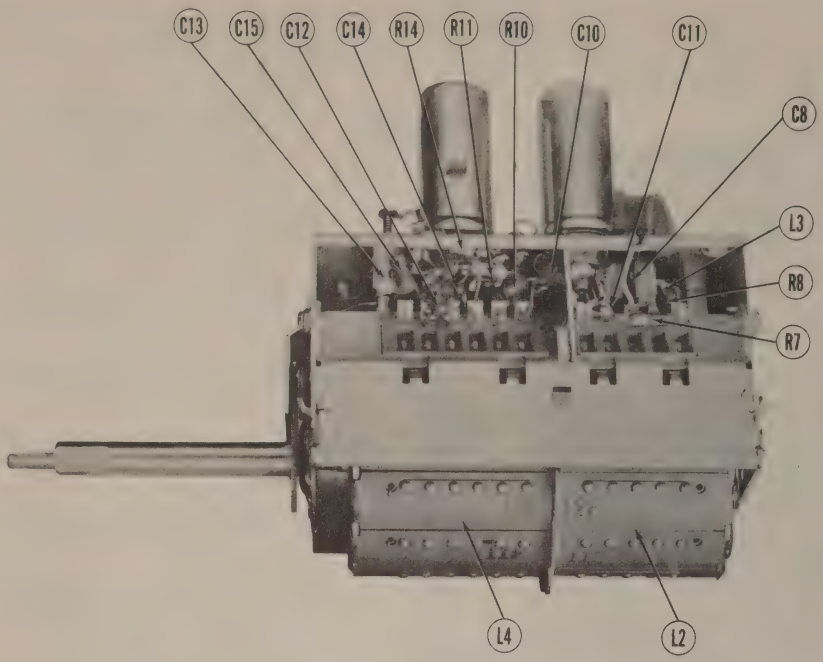
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	2.2Meg	0Ω	.1Ω	0Ω	#2.4KΩ	#2.4KΩ	0Ω		
V 2	6J6	#4.9KΩ	#15KΩ	.1Ω	0Ω	225KΩ	10KΩ	0Ω		
V 3	6AU6	22KΩ	0Ω	.1Ω	0Ω	#200Ω	#200Ω	120Ω		
V 4	6AU6	2.2Meg	0Ω	.1Ω	0Ω	#100Ω	#100Ω	82Ω		
V 5	6AU6	.3Ω	0Ω	.1Ω	0Ω	#.3Ω	#0Ω	47Ω		
V 6	6AL5	.3Ω	Inf.	0Ω	.1Ω	Inf.	0Ω	2.2KΩ		
V 7	12AU7	†55KΩ	1Meg	5KΩ	0Ω	0Ω	†4.7KΩ	1Meg	470Ω	.1Ω
V 8	6AU6	#3.9KΩ	#3.9KΩ	#.1Ω	#0Ω	†1KΩ	†1KΩ	#4KΩ		
V 9	6AL5	0Ω	20KΩ	0Ω	.1Ω	Inf.	0Ω	Inf		
V 10	6AV6	4.7Meg	0Ω	.1Ω	0Ω	Inf.	Inf.	†220KΩ		
V 11	6V6GT	.4Ω	#.1Ω	†960Ω	†400Ω	280KΩ	180KΩ	#0Ω	40KΩ	
V 12	12AU7	260KΩ	0Ω	330KΩ	0Ω	0Ω	#6.6KΩ	1Meg	3.3KΩ	.1Ω
V 13	6SN7GT	1Meg 2Meg	†150KΩ	0Ω	1Meg 2 Meg	▲ 1Meg ▲ 4Meg	0Ω	0Ω	.1Ω	
V 14	6S4	Inf.	5.8KΩ 820Ω	1Meg	.1Ω	0Ω	1Meg	Inf.	Inf.	▲1KΩ
V 15	6AL5	10Ω	10Ω	0Ω	.1Ω	4.8Meg	0Ω	4.8Meg		
V 16	6SN7GT	12KΩ	†150KΩ	3.9KΩ	5.2Meg	†12KΩ	3.9KΩ	.1Ω	0Ω	
V 17	6J5	0Ω	.1Ω	†390KΩ	Inf.	220KΩ	.6Ω	0Ω	0Ω	
V 18	6CD6G	Inf.	.1Ω	300Ω	220KΩ	220KΩ	Inf.	0Ω	†10KΩ	TOP CAP ▲ 50Ω
V 19	6U4GT	Inf.	Inf.	300KΩ	Inf.	†400Ω	Inf.	▲ 50Ω	▲ 50Ω	
V 20	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP ▲ 200Ω
V 21	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP Inf.
V 22	5U4G	Inf.	35KΩ	Inf.	25Ω	Inf.	25Ω	22Ω	35KΩ	
V 23	19AP4A	0Ω	430KΩ	PIN 10 † 150KΩ	PIN 140KΩ	11 33KΩ	PIN 12 .1Ω			

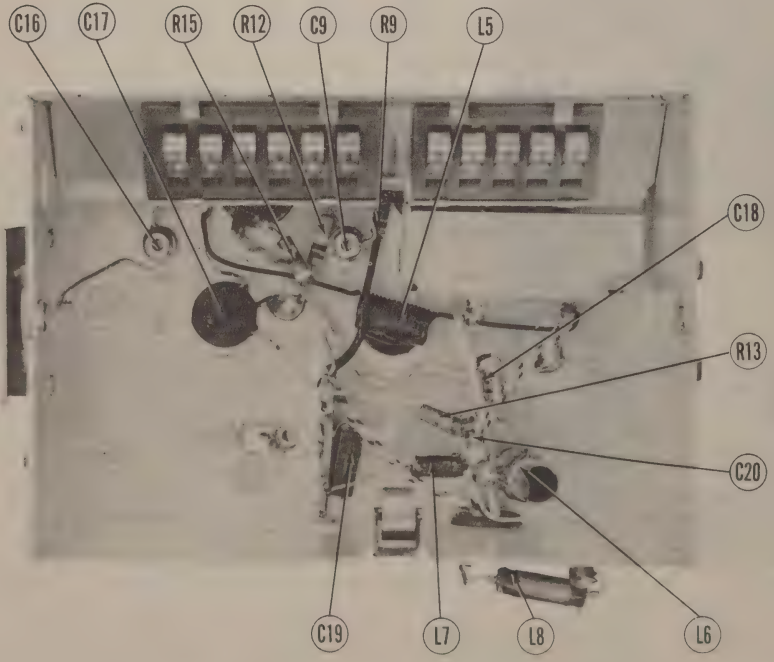
FUNCTION SWITCH IN TV POSITION
MEASURED FROM PIN 8 OF V11
† MEASURED FROM PIN 2 OF V22
▲ MEASURED FROM PIN 3 OF V 19

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED

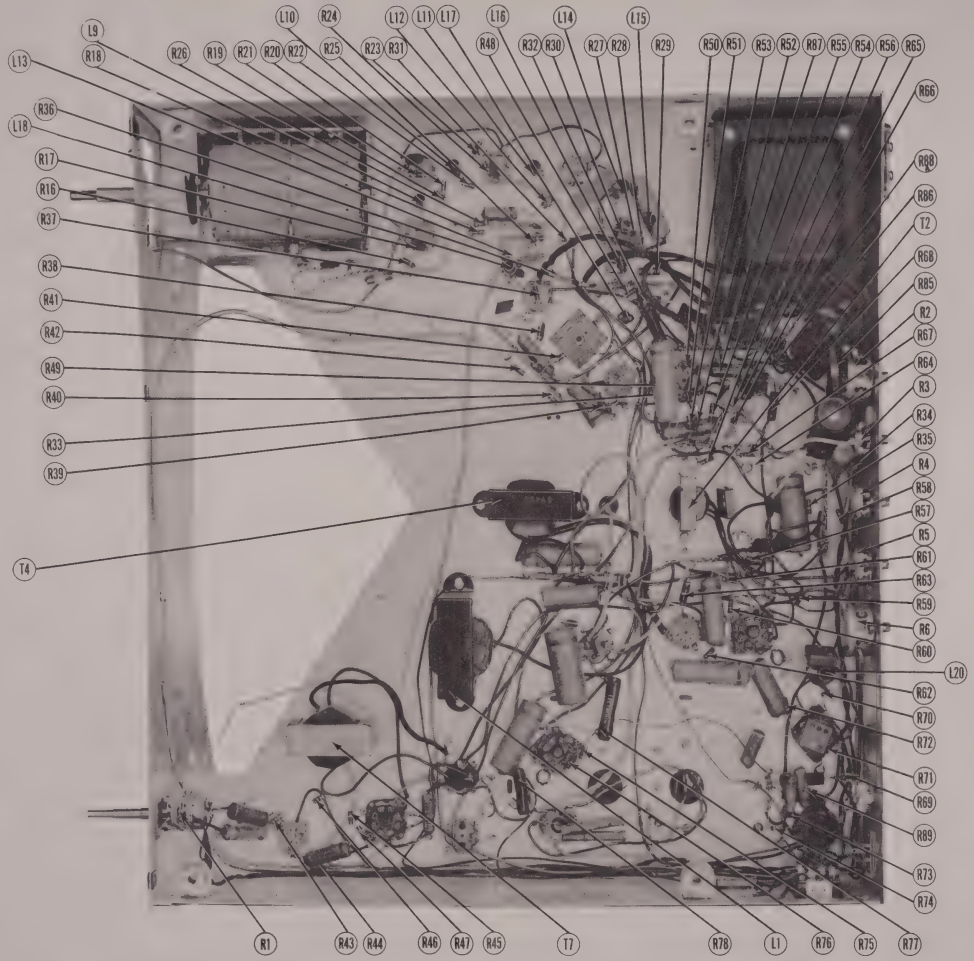
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.
Adjust the horizontal hold slug (B1) until the picture synchronizes horizontally .
Switch to another channel and back again, if picture does not fall back into synchronization immediately, readjust B1 and repeat the check. Repeat this procedure until the picture falls immediately into sync when switched back on channel.
Adjust the horizontal drive trimmer (B2) for best compromise between brightness and horizontal linearity.
Adjust the width slug (B3) until picture fills the mask horizontally.
Adjust the horizontal linearity slug (B4) until the picture is symmetrical from left to right.
Slight readjustment of B2 may be required for optimum results.

DISASSEMBLY INSTRUCTIONS

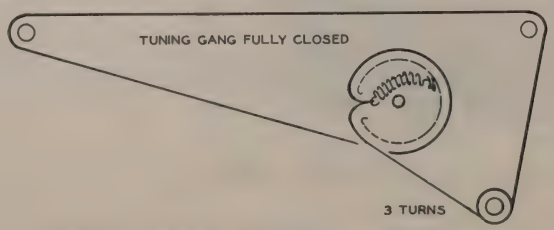
TV CHASSIS REMOVAL

1. Remove four push-on type control knobs.
2. Remove seven wood screws holding rear cover in place. Remove rear cover.
3. Disconnect built-in antenna.
4. Disconnect FM radio antenna.
5. Disconnect speaker.
6. Disconnect AM-FM radio power plug.
7. Remove phono power plug.
8. Remove four 7/16" hex head bolts from chassis. Remove chassis.
9. Remove four phillips head screws on speaker guards. Move guards away from speaker. Remove speaker.

AM-FM RADIO CHASSIS REMOVAL

1. Remove three push-on control knobs.
2. Remove four brass screws securing top cover to radio drawer.
3. Disconnect phono jack.
4. Disconnect built-in antenna.
5. Remove three screws securing chassis to cabinet. Remove chassis.

NOTE: FOR PICTURE TUBE REMOVAL, IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.



DIAL CORD STRINGING

TV PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Packard-Bell PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	6CB6	6CB6	6CK	
B	RF Amplifier	6AG5	6AG5	7BD	
C	RF Amplifier	6BC5	6BC5	7BD	
V2	Converter	6J6	6J6	7BF	
V3	1st Video IF Amp.	6AU6	6AU6	7BK	
V4	2nd Video IF Amp.	6AU6	6AU6	7BK	
V5	3rd Video IF Amp.	6AU6	6AU6	7BK	
V6	Video Detector	6AL5	6AL5	6BT	
V7	Video Amplifier	12AU7	12AU7	9A	
V8	Sound IF Amp.	6AU6	6AU6	7BK	
V9	Ratio Detector	6AL5	6AL5	6BT	
V10	AF Amplifier	6AV6	6AV6	7BT	
V11	Audio Output	6V6GT	6V6GT	7AC	
V12	DC Rest. -Sync. Amp Sync. Separator	12AU7	12AU7	9A	
V13	Vert. Oscillator - Discharge	6SN7GT	6SN7GT	8BD	
V14	Vert. Output	6S4	6S4	9AC	
V15	Horiz. Phase Det.	6AL5	6AL5	6BD	
V16	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V17	Horiz. Discharge	6J5	6J5	6Q	
V18	Horiz. Output	6CD6G	6CD6G	5BT	
V19	Damper	6U4GT	6U4GT	4CG	
V20	H.V. Rectifier	1B3GT	1B3GT	3C	
V21	H.V. Rectifier	1B3GT	1B3GT	3C	
V22	L.V. Rectifier	5U4G	5U4G	5T	
V23	Picture Tube	19AP4A	19AP4A	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Packard-Bell PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450		AF88J20E		UPT4450-1020		TVL-3764	▲ Filter
B	40	450							■ Filter
C	100	200							▲ Filter
C2A	40	450		AF88J2K		UPT44145		TVL-2764	▲ Filter
B	40	450						TVA-1902	■ Filter
C	10	500							▲ Decoupling
C3	40	350		PRS450/40		BR4035A		TVA-1611	Filter
C4A	10	450		AFH162J		UPT204		TVL-2810	▲ 1st V. Amp. Dec.
B	100	50							▲ Vert. Output Dec.
C5	25	25		PRS25/25		BR252A		TVA-1205	2nd V. Amp. Cathode
C6	5	50		PRS150/4		BR550		TVA-1303	Stabilizing Cap.
C7	50	50		PRS50/50		BR505		TVA-1308	Filter
C8	3-9								Variable Trimmer
C9	.5-3				829-3				Variable Trimmer
C10	120			SI120	D6-121		GP2K-120	19C29	RF Amp. Dec.
C11	1000			SI1000	D6-102		GP2L-001	19C1	RF Amp. Fil.
C12	100			SI100N750	TCN-100		N750L-100	29C16	RF Coupling
C13	.5-3				829-3				Variable Trimmer
C14	20			SI20NPO	TCZ-20		NPOK-20		Osc. Grid Cap
C15	10			SI10N750	TCN-10		N750K-10	19C4	Fixed Trimmer
C16	.5-3				829-3				Variable Trimmer
C17A	1000		BPD-2X001	DD-2-102			812-2X001	29C7	RF Bypass
B	1000								Conv. Filament
C18	10			SI10NPO	TCZ-10		NPOK-10	19C3	Fixed Trimmer
C19	72	500							Fixed Trimmer
C20	300			SI300	D6-301		GP2K-300	19C14	IF Coupling
C21	5000			BPD-005	DD-502	1D5D5	811-005	29C1	1st V. IF Dec.
C22	5000			BPD-005	DD-502	1D5D5	811-005	29C1	1st V. IF Cath.
C23	.05	200		P288-05	DF-503	PTE4S5		2TM-S5	AGC Filter
C24	5000			BPD-005	DD-502	1D5D5	811-005	29C1	2nd V. IF Dec.
C25	5000			BPD-005	DD-502	1D5D5	811-005	29C1	3rd V. IF Dec.
C26	.05	200		P288-05	DF-503	PTE4S5		2TM-S5	Video Coupling
C27	56				TCZ-56		NPOM-56		Fixed Trimmer
C28	.05	600		P688-05	DF-503	PTE6S5		6TM-S5	Video Coupling
C29	.1	600		P688-1	DF-104	PTE6P1		6TM-P1	Video Coupling
C30	.005	600		P688-005	D6-502	PTE6D5	811-005	6TM-D5	Video Coupling
C31	.1	200		P288-1	DF-104	PTE4P1		2TM-P1	Pic. Tube Cath.
C32	2.2				TCZ-2.2				S. IF Coupling
C33	75			SI75N750	TCN-75		N750L-75		Fixed Trimmer
C34A	4000		BPD-2X004	DD-2-502	1D5D4		822-2X004	36C2	S. IF Dec.
B	4000				1D5D4				S. IF Cathode
C35	5000			BPD-005	DD-502	1D5D5	811-005	29C1	S. IF Dec.
C36	330			SI330	D6-331	5W5T3	GP2K-330	19C14	Diode Load Cap
C37	.003	600		P688-003	D6-302	PTE6D3	GP2M-003	6TM-D3	De-emphasis
C38	.02	600		P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C39	.02	600		P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C40	.02	600		P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C41	.005	600		P688-005	D6-502	PTE6D5	811-005	6TM-D5	Output Plate
C42	.05	200		P288-05	DF-503	PTE4S5		2TM-S5	Sync. Coupling
C43A	2000		• P688-002	*		PTE6D2	GP2M-002	6TM-D2	Integrator Net
B	5000		P688-005	PC-100		PTE6D5	811-005	6TM-D5	Integrator Net
C	5000		P688-005			PTE6D5	811-005	6TM-D5	Integrator Net
C44	4900		1464-005			1DR5D5		MS-25	Vert. Osc. Grid
C45	.2	600	684-25			GT6P25		6TM-P25	Vert. Osc. Dec.
C46	.05	600	P688-05			PTE6S5		6TM-S5	Vert. Discharge
C47	.1	600	P688-1	DF-104		PTE6P1		6TM-P1	Vert. Sweep Coupling
C48	.01	600	P688-01	D6-103		PTE6S1	821-01	6TM-S1	Vert. Sweep Coupling
C49	1500		SI1500	D6-152		1W5D15	GP2L-0015	29C8	Horiz. Sync. Coupling
C50	1500		SI1500	D6-152		1W5D15	GP2L-0015	29C8	Horiz. Sync. Coupling
C51	.1	200	P288-1	DF-104		PTE4P1		2TM-P1	Voltage Divider
C52	5000		P688-005	D6-502		1D5D5	811-005	29C1	AFC Filter
C53	.1	200	P288-1	DF-104		PTE4P1		2TM-P1	AFC Filter
C54	1200	500	SI1200	D6-122			GP2L-0012		Horiz. MV Feedback
C55	.001	600	P688-001	D6-102		PTE6D1	GP2L-001	6TM-D1	Horiz. MV Plate
C56	.01	600	P688-01	D6-103		PTE6S1	821-01	6TM-S1	Horiz. Sweep Coupling
C57	.01	600	P688-01	D6-103		PTE6S1	821-01	6TM-S1	Horiz. Sweep Coupling

TV PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA Packard-Bell PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C58	.2	600		P488-23		QYEP25		5TM-P25	Horiz. Output Screen
C59	.5	200		P288-5		QTAP5		3TM-P5	Horiz. Output Cathode
C60	.1	200		P288-1		PTE4P1		3TM-P1	Damper Filter
C61	.033	600		P488-333		PTE5P3		5TM-S3	Damper Filter
C62	200	2000							Horiz. Sweep Coupling
C63	300	3000							Horiz. Sweep Coupling
C64	.003	600		P488-003	D6-302	PTE5D3	GP2M-003	6TM-D3	Fixed Trimmer
C65		600		P488-1	DF-104	PTE5P1		6TM-P1	Horiz. Sweep Coupling
C66	500	10000		HV10C	TV3-50B				Voltage Doubler Cap
C67	500	10000		HV10C	TV3-50A				H.V. Filter
C68	500	2000		HV30C	TV3-503				H.V. Filter
C69	4000	500		1464-004		IDR5D4		MS-34	Fixed Trimmer
C70	.01	±25VAC		P488-10	D6-103	PTE5S1	82L-01	5TM-S1	Line Filter
C71	.01	±25VAC		P488-10	D6-103	PTE5S1	82L-01	5TM-S1	Line Filter

* Items C43A, C43B, C43C, R56A, R56B and R56C are combined into one unit.
† Items C52 and R64 are combined into one unit.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Packard-Bell PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	5000Ω	½		(Concentrikit) B17-114 *			Contrast Control - Front
B	5.0KΩ	1	25835	B17-113 *	RTV-212	SBB-627-S	Volume Control - Rear
C	Shaft-End			E-202 *			Attach Per Instructions in "Concentrikit"
D	Switch			76-1 *			Attach Per Instructions in "Concentrikit"
R2	1500Ω	4	25812		RTV-6	SVP-994	Focus Control - Wire Wound
R3A	500KΩ	½	25832	Q11-133	AG-58-S	AM-59	Brightness Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R3A Per Instructions
R4A	1Meg	½	25833	Q11-137	AG-61-S	AM-59	Vertical Hold Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R4A Per Instructions
R5A	3Meg	½	25850	Q11-140	AG-85-S	AM-84	Height Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R5A Per Instructions
R6	5000Ω	4	25807B		RTV-10	VK-135	Vertical Linearity Control - Wire Wound

* Additional parts to be used in "Concentrikit".

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Packard-Bell PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R7	3900Ω	½		BTS-3900	Antenna Coil Shunt
R8	47KΩ 20%	½		BTS-47K	AGC Network
R9	3200Ω	½		BTS-3200	RF Amp. Decoupling
R10	10KΩ 20%	½			RF Coil Shunt
R11	4700Ω	½		BTS-4700	Mixer Grid
R12	220KΩ 20%	½			Mixer Grid
R13	15KΩ 20%	½			Mixer Grid
R14	10KΩ	½			Osc. Grid
R15	4700Ω	½		BTS-4700	Osc. Plate
R16	220KΩ	½			1st Video Amp. Grid
R17	120Ω	½		BTS-120	1st Video Amp. Cathode
R18	2.2Meg 20%	½		BTS-2.2Meg	AGC Network
R19	12KΩ	½			Sec. Video IF Transformer Shunt
R20	100Ω	½		BTS-100	Decoupling
R21	82Ω	½		BTS-82	Sec. Video IF Cathode
R22	100Ω	½		BTS-100	Decoupling
R23	22KΩ 20%	½			3rd Video IF Transformer Shunt
R24	47Ω	½			3rd Video IF Amp. Cathode
R25	4700Ω	½		BTS-4700	Video Detector Load
R26	3300Ω	½		BTS-3300	AGC Network
R27	1Meg 20%	½		BTS-1Meg	Video Amp. Grid
R28	330Ω	½		BTS-330	Video Amp. Plate
R29	56KΩ	½		BTA-56K	Video Amp. Plate Decoupling
R30	1Meg 20%	½		BTS-1Meg	Video Amp. Grid
R31	4700Ω	½		BTS-470	Video Amp. Cathode
R32	4700Ω	2		BTB-4700	Video Amp. Plate
R33	10KΩ 20%	½		BTS-10K	Picture Tube Grid
R34	33KΩ	½		BTS-33K	Picture Tube Cathode
R35	150KΩ	½		BTS-150K	ACC. Anode Load
R36	3900Ω	½		BTS-3900	Bias Network
R37	120Ω	½		BTS-120	Sound IF Amp. Cathode
R38	1000Ω	½		BTS-1000	Sound IF Amp. Decoupling
R39	10KΩ	½		BTS-10K	Ratio Detector Diode Load
R40	10KΩ	½		BTS-10K	Ratio Detector Diode Load
R41	470Ω	½		BTS-470	Balancing
R42	22K	½		BTS-22K	De-emphasis
R43	4.7Meg	½		BTS-4.7Meg	A.F. Amp. Grid
R44	220KΩ	½		BTS-220K	A.F. Amp. Plate
R45	100KΩ	½		BTS-100K	Output Grid
R46	180KΩ	½		BTS-180K	Bias Network
R47	270KΩ	½		BTS-270K	Voltage Divider
R48	220KΩ	½		BTS-220K	Isolation
R49	330KΩ	½		BTS-330K	Voltage Divider
R50	330KΩ 20%	½		BTS-330K	Sync. Sep. Cathode
R51	1.5Meg 20%	½		BTS-1.5Meg	Sync. Sep. Plate
R52	1Meg 20%	½		BTS-1Meg	Asyc. Amp. Grid
R53	330KΩ	½		BTS-330K	Sync. Amp. Cathode
R54	330KΩ	½		BTS-330K	Sync. Amp. Plate
R55	330KΩ	½		BTS-330K	Sync. Amp. Plate
R56A	22KΩ	*		BTS-22K	Integrator
B	82.00Ω			BTS-8200	Integrator
R57	82.00Ω			BTS-8200	Integrator
R57	1Meg 20%	½		BTS-1Meg	Vertical Osc. Grid - See Note 1
R58	15KΩ 20%	½		BTS-15K	Vertical Osc. Plate
R59	10KΩ	½		BTS-10K	Vertical Osc. Transformer Shunt
R60	1Meg 20%	½		BTS-1Meg	Vertical Discharge Plate - See Note 2
R61	470KΩ	½		BTS-470K	Vertical Peaking
R62	1Meg 20%	½		BTS-1Meg	Vertical Output Grid
R63	82KΩ	½		BTA-82K	Vertical Output Cathode
R64	470KΩ	½	†	BTS-470K	Horizontal AFC Filter
R65	100KΩ 20%	½		BTS-100K	Horizontal Phase Detector Diode Load

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Packard-Bell PART No.	IRC PART No.	IDENTIFICATION CODES
R66	100KΩ 20%	½		BTS-100K	Horizontal Phase Detector Diode Load
R67	4.7Meg 20%	½		BTS-4.7Meg	Horizontal Phase Detector Diode Load
R68	10Ω	1			Horizontal AFC Filter
R69	3900Ω	½		BTS-3900	Horizontal MV Cathode
R70	12KΩ	½		BTS-12K	Horizontal MV Plate
R71	12KΩ	½		BTS-12K	Horizontal MV Grid
R72	150KΩ	½		BTS-150K	Horizontal MV Plate
R73	220KΩ 20%	½		BTS-220K	Horizontal Disc. Grid
R74	390KΩ	½		BTS-390K	Horizontal Disc. Plate
R75	100Ω	½		BTS-100	Parasitic Suppressor
R76	220KΩ 20%	½		BTS-220K	Horizontal Output Grid
R77	200Ω	10		1 3/4A-200	Horizontal Output Cathode - Wire Wound
R78	10KΩ	5		1 3/4A-500	Horizontal Output Screen - Wire Wound
R79	100Ω	1		BTA-1000	Horizontal Linearity Shunt
R80	500Ω	5		1 3/4A-500	Width Coil Shunt - Wire Wound
R81	66Ω	½			H. V. Rectifier Filament - Wire Wound
R82	.66Ω	½			H. V. Rectifier Filament - Wire Wound
R83	1Meg	1			H. V. Rectifier Load
R84	1Meg	1			H. V. Rectifier Load
R85	500Ω	5		1 3/4A-500	Focus Coil Shunt - Wire Wound
R86	22Ω	1		BW-1-22	Bias Network
R87	500Ω	5		1 3/4A-500	Surge Limiter - Wire Wound
R88	100KΩ 20%	½		BTS-100K	Isolation
R89	39KΩ	½		BTS-39K	Horizontal Peaking

* Items R56A, R56B, R56C, C43A, C43B and C43C are combined into one unit.
† Items R64 and C52 are combined into one unit.
Note 1. Some models use 470KΩ resistor in this application.
Note 2. Some models use 1.5 meg resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA Packard-Bell PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC @ 1.9A	760VCT @ .340ADC	5VAC @ 3A	6.3VAC ④ 1.2A SEC. 4 6.3VAC ⑤ 8.2A	89036			

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA Packard-Bell PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	230Ω	1350Ω	89031	A-8111 ①	A-3000 ① BW5-5	T80-1 ①	Vertical Osc. Trasformer
T3	210Ω Tap 43Ω	6Ω Tap 11.2Ω SEC. 2 .6Ω SEC. 3 .9Ω SEC. 4 .9Ω					Horizontal Output
T4	1.15KΩ Tap 11Ω		89430	A-8123	A-3036	T80-5 ①	Vertical Output
T5A	15Ω			DY-7	MDF-70		Horizontal Deflection Coil
B	47Ω						Vertical Deflection Coil
T6	465Ω		29519		MF-2		Focus Coil

① Drill new mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA Packard-Bell PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T7	7.5KΩ	5.4Ω	560Ω	6Ω	88426	A-3849 ①	A-3020 ①	R6-13 ①	① New mounting hole

SPEAKER

ITEM No.	RATINGS FIELD RES.	RATINGS V. C. IMP.	REPLACEMENT DATA Packard-Bell PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	PM	4.5Ω	BH8H8	12J12	12A4A	
	CONE DIA.	V. C. DIA.				
SP2	11 9/16"	1"				

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE @ CURRENT 1000 mA	REPLACEMENT DATA Packard-Bell PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1	.200A	42Ω	1.8 Henries	27005	C-2325 ①	C-2991	TR3300 ①	① New mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA Packard-Bell PART No.	MEISSNER PART No.	NOTES
L2	Antenna Coil	0Ω	0Ω			
L3	Fil. Choke	0Ω				
L4	RF, Mixer Grid and Osc. Coils	0Ω				
L5	Fil. Choke	0Ω				
L6	1st Video IF	.6Ω				
L7	Conv. Plate Trap	.6Ω				

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA Packard-Bell PART No.	MEISSNER PART No.	NOTES
L8	1st Video IF	.9Ω				Wound on 3.3KΩ resistor
L9	2nd Video IF	.3Ω	.3Ω			
L10	3rd Video IF	.3Ω	.3Ω			
L11	4th Video IF	.3Ω	.3Ω			
L12	Peaking	3.6Ω				36 Microhenries (Black Dot)
L13	Peaking	0.6Ω		19-1921 ①		180 Microhenries - White Dot (Wound on 39KΩ resistor)
L14	4.5MC Trap	1.6Ω				
L15	Peaking	7.5Ω		19-1921 ②		120 Microhenries - Blue Dot (Wound on 22KΩ resistor)
L16	Peaking	3.6Ω				36 Microhenries - Black Dot
L17	Peaking	6.5Ω		19-1920		83 Microhenries - Red Dot
L18	Sound IF	1.1Ω				
L19	Ratio Det. Trans.	4.3Ω	.3Ω			Tap at 1.5Ω
L20	Horiz. Freq.	105Ω				
L21	Horiz. Lin.	5.5Ω				
L22	Width Coil	2.2Ω				

① Parallel with 39KΩ resistor.
② Parallel with 22KΩ resistor.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA Packard-Bell FUSE	Packard-Bell HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	REMARKS
M1	3AG	.250			318.250		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA Packard-Bell PART No.	NOTES
M2	Bayonet	6-8	.25	Blue		Type #44

MISCELLANEOUS

ITEM No.	PART NAME	Packard-Bell PART No.	NOTES
M3	RF Tuner	10528	
M4	Ion Trap		
B3	Trimmer		Horizontal Drive (300-800MMF)
	Escutcheon	41040	Dial
	Safety Glass	55027-2	
	Knob	52067-1	Channel Selector
	Knob	52068	Fine Tuning
	Knob	52070	Contrast
	Knob	52069-1	Volume

RADIO PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA Packard - Bell PART No.	REPLACEMENT DATA STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V24	FM RF Amp. - Mixer	12AT7	12AT7	9A	
V25	FM Oscillator - AM Converter	6BE6	6BE6	7CH	
V26	1st FM - AM IF Amp	6BA6	6BA6	7CH	
V27	2nd FM IF Amp. - AM Detector	6AU6	6AU6	7BK	
V28	Ratio Detector	6AL5	6AL5	6BT	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA Packard - Bell PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C72	5	50		P82S50/5		BR550			TVA-1303 Stabilizing Cap
C73	470			S1470	D6-471	5W575	GP2K-470	10C18	FM RF Cathode
C74	470			S1470	D6-471	5W575	GP2K-470	19C15	FM RF Plate Dec.
C75	100			SI100	D6-101	5W571	GP1K-100	19C11	RF Coupling
C76	100			SI100	D6-101	5W571	GP1K-100	19C11	RF Coupling
C77	100			SI100NPO	TCZ-100	SR5T5	MPGM-100	38C10	Fixed Trimmer
C78	10000			BPD-01	DD-103	PTE4S1	82L-01	38C1	AVC Filter
C79	10000			BPD-01	DD-103	PTE4S1	82L-01	38C1	Conv. Decoupling
C80	100			SI100NPO	TCZ-100	SR5T1	MPGM-100	38C10	Fixed Trimmer
C81	33			SI33	D6-330	5W5Q4	GP1K-33	19C24	Osc. Grid Cap
C82	2.2				TCZ-2.2				Osc. Feedback
C83	470			S1470	D6-471	5W575	GP2K-470	19C15	Conv. Filament
C84	10000			BPD-01	DD-103	PTE4S1	82L-01	38C1	AVC Filter
C85	10000			BPD-01	DD-103	PTE4S1	82L-01	38C1	1st IF Dec.
C86	10000			BPD-01	DD-103	PTE4S1	82L-01	38C1	RF Bypass
C87A	10000			BPD-01	DD-103	PTE4S1	82L-01	38C1	1st IF Fil.
B	10000			BPD-01	DD-103	PTE4S1	82L-01	38C1	1st IF Fil.
C88A	100	†		SI100	‡	5W571	GP1K-100	19C11	Diode RF Filter
B	100			SI100	‡ PC-50	5W571	GP1K-100	19C11	Diode RF Filter
C89	10000			BPD-01	DD-103	PTE4S1	82L-01	38C1	2nd IF Dec.
C90A	10000			BPD-01	DD-103	PTE4S1	82L-01	38C1	2nd IF Dec.
B	10000			BPD-01	DD-103	PTE4S1	82L-01	38C1	2nd IF Fil.
C91	150			SI150	D6-151	5W5T5	GP2K-150	19C12	Diode Load Cap
C92	150			SI150	D6-151	5W5T5	GP2K-150	19C12	Diode Load Cap
C93A	10000			BPD-01	DD-103	PTE4S1	82L-01	38C1	Ratio Det. Fil.
B	10000			BPD-01	DD-103	PTE4S1	82L-01	38C1	Ratio Det. Fil.
C94	.002	600		P488-002	D6-202	PTE5D2	GP2M-002	6TM-D2	De-emphasis
C95	.002	600		P488-002	D6-202	PTE5D2	GP2M-002	6TM-D2	Tone Comp. §

† Items C88A, C88B and R108 are combined into one unit.
§ Some models use .01MFD in this application.

RADIO PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	Packard-Bell PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R90A	3 Meg	½	25512	Q13-140	AG-67-Z	B-85	Tone Control
B	Shaft		Not req.	Not req.	FS-3	Not req.	Attach to R90A Per Instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	Packard-Bell PART No.	IRC PART No.	
R91	220Ω	½		BTS-220	FM RF Amp. Cathode
R92	1000Ω	½		BTS-1000	FM RF Amp. Detector
R93	470KΩ	½			FM RF Amp. Grid
R94	6800Ω	2		BTB-6800	Decoupling
R95	22KΩ	½			FM Osc. Grid
R96	100K	½		BTS-100K	AVC Network
R97	1Meg	½		BTS-1Meg	AVC Network
R98	68Ω	½			1st IF Amp. Cathode
R99	2200Ω	½		BTS-2200	1st IF Amp. Decoupling
R100	120Ω	½		BTS-120	2nd FM Amp. Cathode
R101	2200Ω	½		BTS-2200	2nd FM Decoupling
R102	6800Ω	½		BTS-6800	Ratio Detector Diode Load
R103	6800Ω	½		BTS-6800	Ratio Detector Diode Load
R104	220Ω	½		BTS-220	Balanicing
R105	27KΩ	½		BTS-27K	De-emphasis
R106	47KΩ	½	†	BTS-47K	Diode Filter
R107	220K	½		BTS-220K	AVC Network

† Items R106, C88A and C88B are combined into one unit.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	Packard-Bell PART No.	MEISSNER PART No.	
L23	FM Ant. Coil	0Ω				Wound on 1.5KΩ resistor
L24	RF Choke	.1Ω				
L25	FM RF Coil	0Ω				
L26	FM Osc. Coil	0Ω				
L27	Loop Ant.	1.5Ω				
L28	Parasitic Suppressor	0Ω				Wound on 22Ω resistor
L29	Cathode Choke	.1Ω				
L30	AM Osc. Coil	5.7Ω			14-1073	Tap at .6Ω
L31	1st AM IF	15Ω	15Ω	29050		
L32	1st FM IF	.1Ω	1.2Ω	29052		
L33	2nd AM IF	15Ω	14Ω	29051	16-6678	
L34	2nd FM IF	1.7Ω	.1Ω	29057		
L35	Ratio Det. Trans.	1.7Ω	.1Ω	29058	17-3483	

PHONO CARTRIDGE and NEEDLE

ITEM No.	Packard-Bell PART No.	REPLACEMENT DATA						REMARKS
		ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M5		ACD-2J	A-1 A-3	W22AB-T	A62A A65MG	96-T	0-3 Or S-3 0-1 Or S-1	

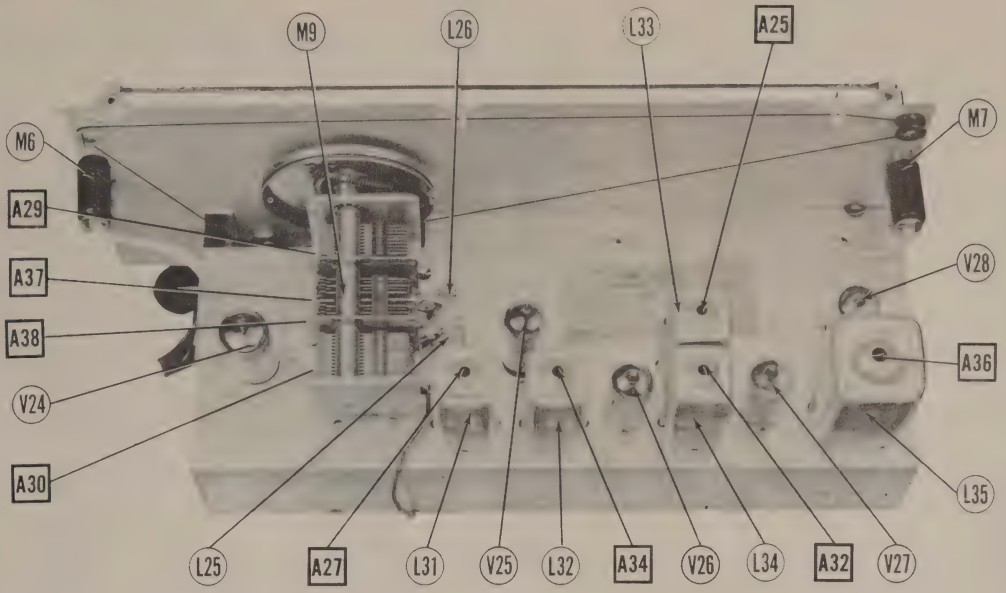
ASTATIC, SHURE AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

DIAL LIGHTS

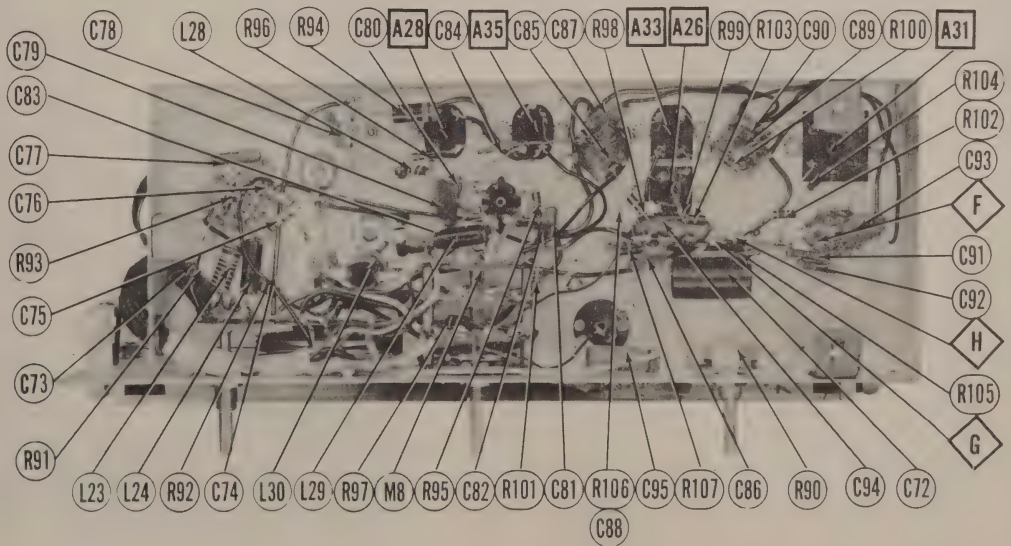
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					Packard-Bell PART No.		
M6	Bayonet	6-8	.25	Blue	None		Type # 44
M7	Bayonet	6-8	.25	Blue	None		Type #44

MISCELLANEOUS

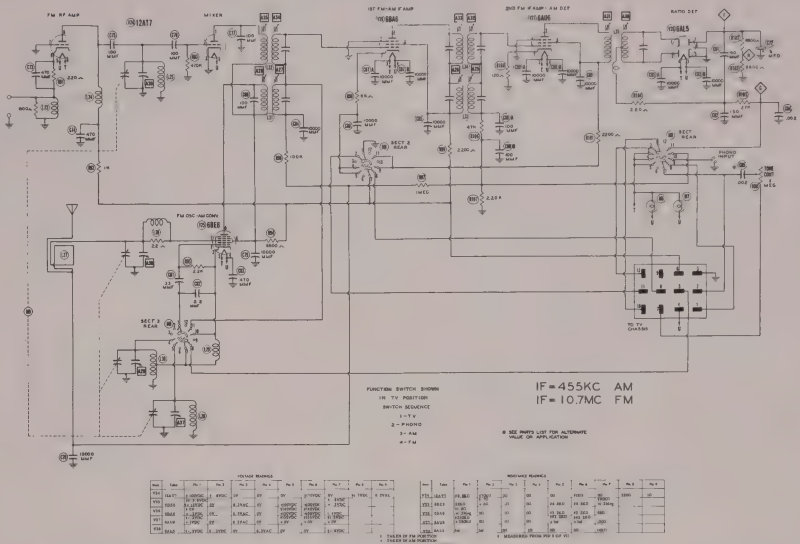
ITEM No.	PART NAME	Packard-Bell PART No.	NOTES
M8	Switch		Function (TV-Phono-AM-FM)
M9	Tuning Capacitor	23527	35-477MMF, 30-196MMF



RADIO CHASSIS-TOP VIEW



RADIO CHASSIS-BOTTOM VIEW



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V101	12AT7	1.9VDC	0	6.3VAC	0V	0V	0V	117VDC	0V	0
V102	12AU6	0	117VDC	6.3VAC	0V	0	117VDC	0	0	0
V103	6BA6	1.9VDC	117VDC	6.3VAC	0V	0	117VDC	0	0	0
V104	6AU6	1.9VDC	117VDC	6.3VAC	0V	0	117VDC	0	0	0
V105	6AL5	0	0	6.3VAC	0V	0	0	0	0	0
V106	6BE6	1.9VDC	117VDC	6.3VAC	0V	0	117VDC	0	0	0
V107	6BA6	1.9VDC	117VDC	6.3VAC	0V	0	117VDC	0	0	0
V108	6AU6	1.9VDC	117VDC	6.3VAC	0V	0	117VDC	0	0	0

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V101	12AT7	470	0	0	68	0	68	110K	0	0
V102	12AU6	220	0	0	68	0	68	110K	0	0
V103	6BA6	220	0	0	68	0	68	110K	0	0
V104	6AU6	220	0	0	68	0	68	110K	0	0
V105	6AL5	0	0	0	0	0	0	0	0	0
V106	6BE6	220	0	0	68	0	68	110K	0	0
V107	6BA6	220	0	0	68	0	68	110K	0	0
V108	6AU6	220	0	0	68	0	68	110K	0	0

† TAKEN BY FM SIGNAL
‡ TAKEN IN AM POSITION
FUNCTION SWITCH IN 1 OR FM POSITION

* MEASURED FROM PIN 2 TO PIN 9

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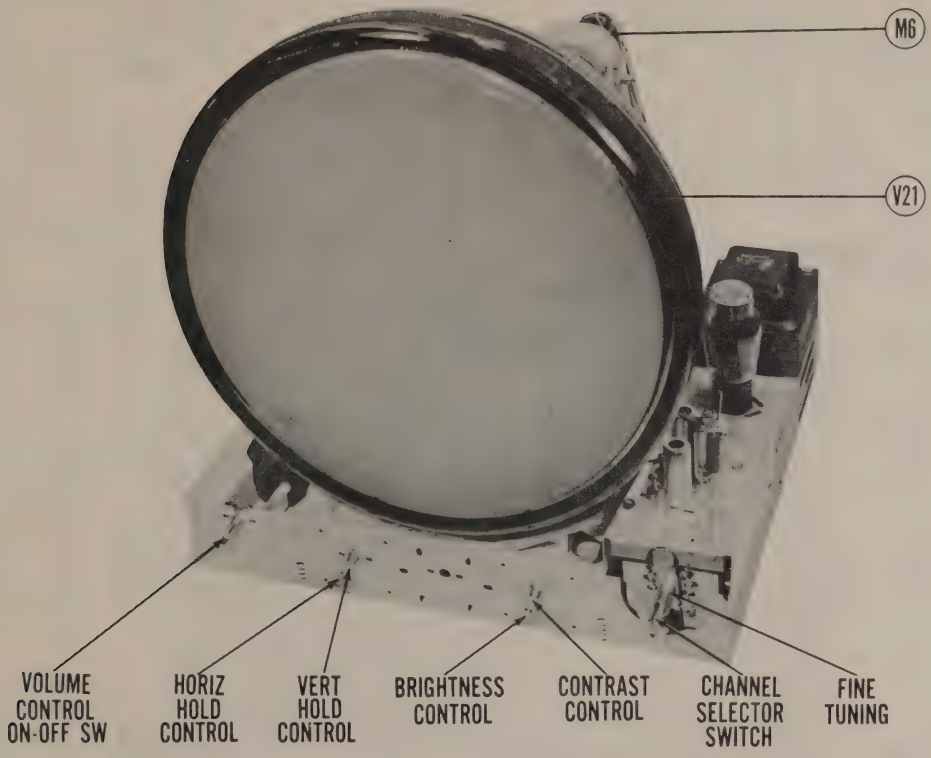
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

PACKARD-BELL MODEL 2803TV

RADIO SCHEMATIC



TELE KING
MODELS 162, 716, 916C

TELE KING MODEL 716

TRADE NAME	Tele King, Models 162, 716, 916C
MANUFACTURER	Tele King Corp., 601 W 26 St., New York (1), N.Y.
TYPE SET	Television Receiver
TUBES	Twenty One
POWER SUPPLY	110-120 Volts AC-60 Cycle
TUNING RANGE—	Channels 2 thru 13

RATING 1.8 Amp. @ 117 Volts AC

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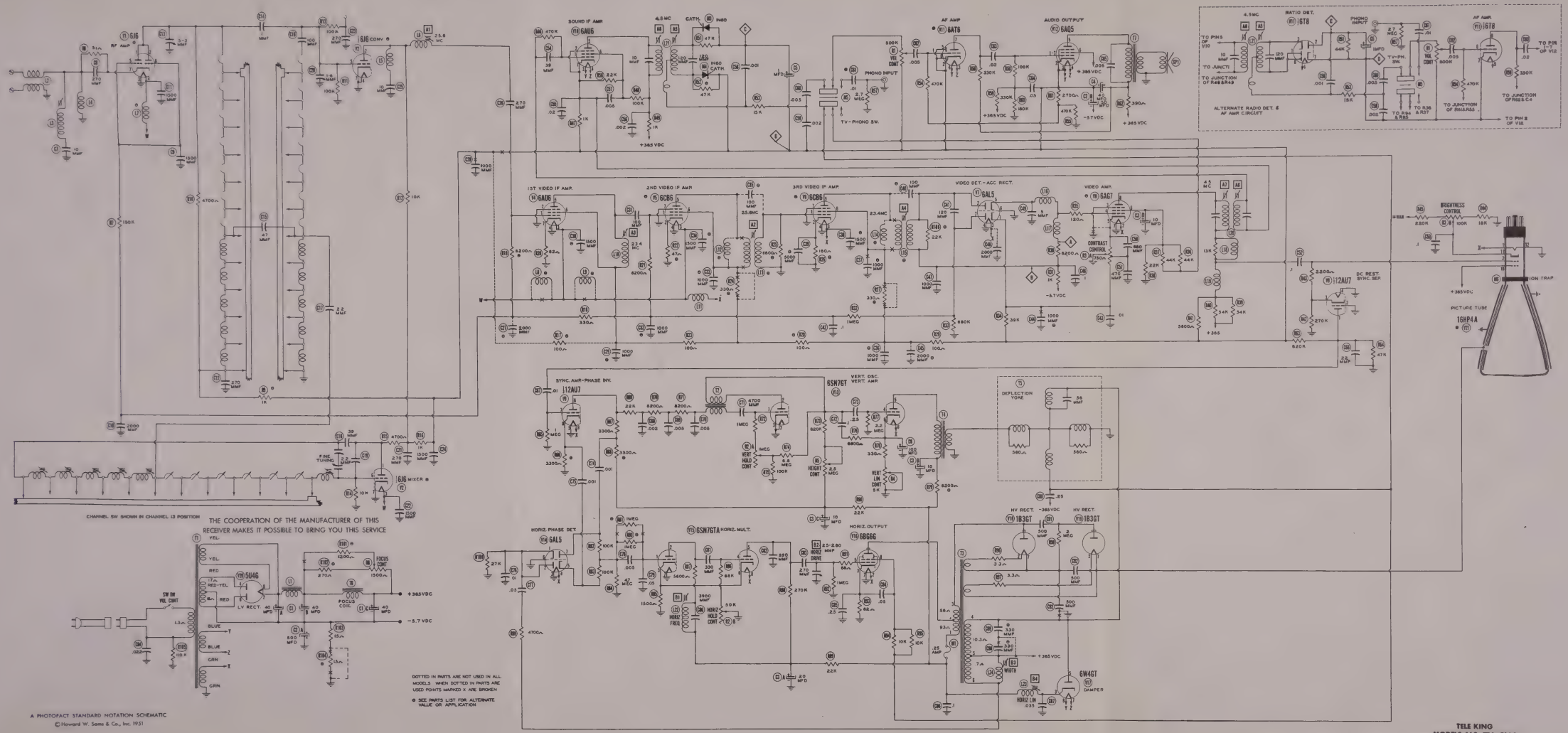
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
CHANNEL SW SHOWN IN CHANNEL 13 POSITION
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
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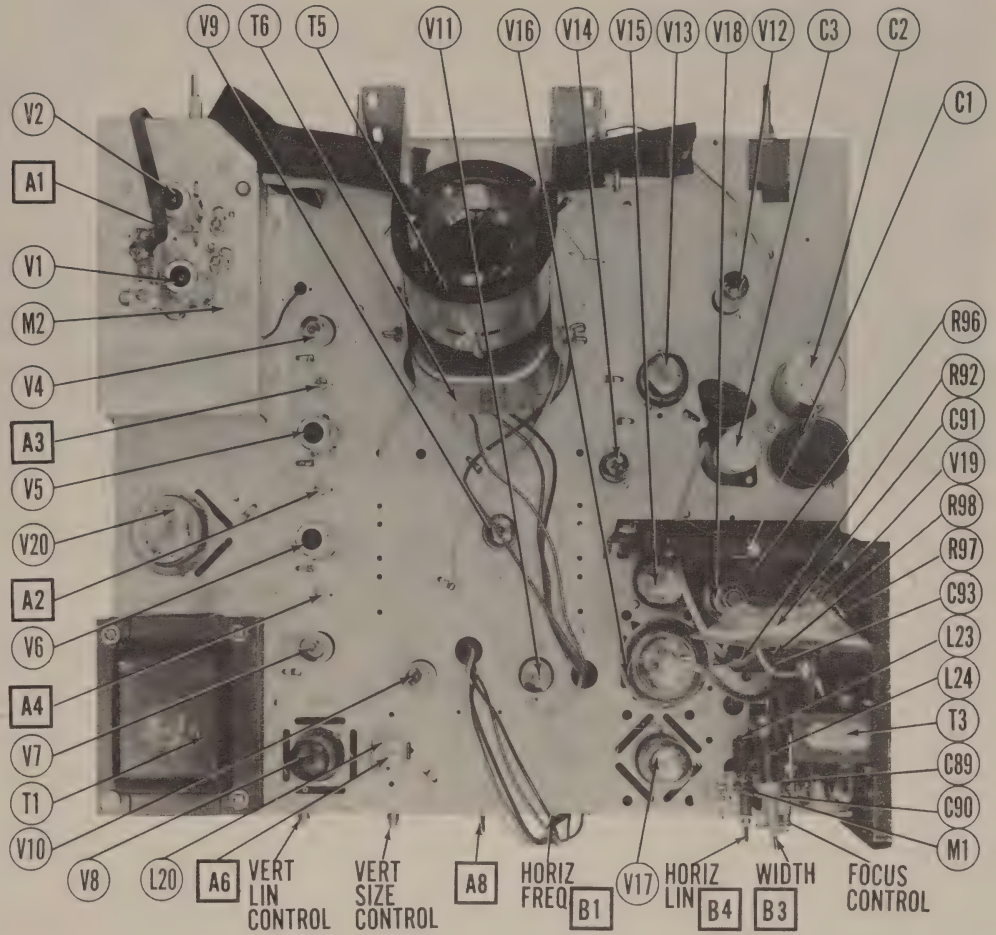
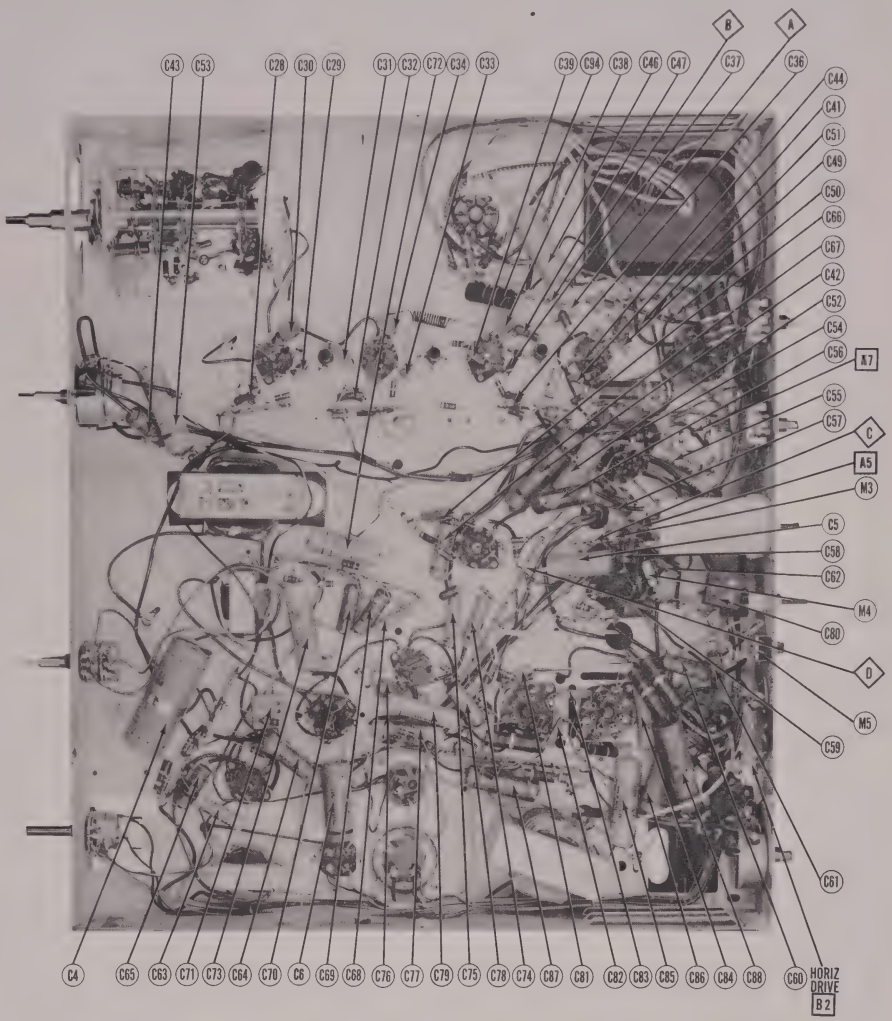
TELE KING
MODELS 162, 716, 916C

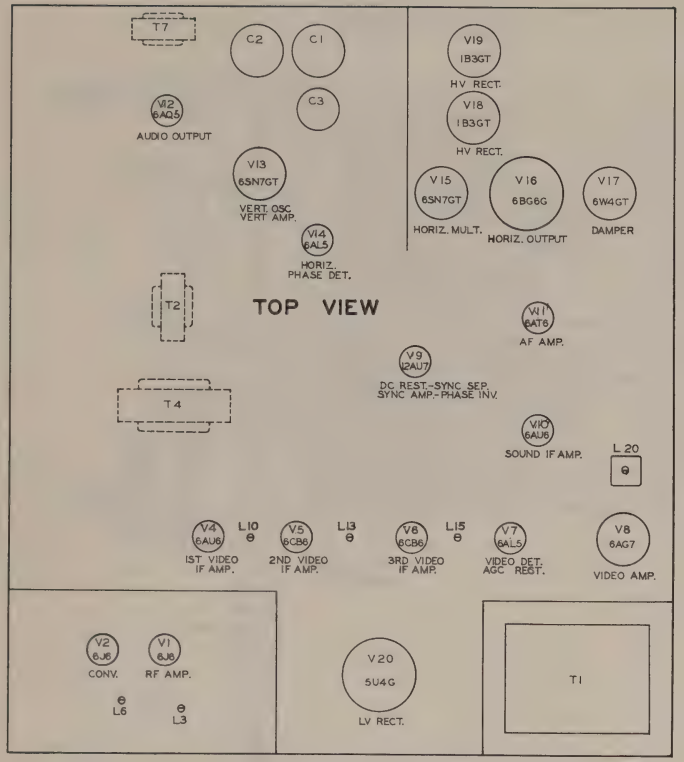
TELE KING
MODELS 162, 716, 916C

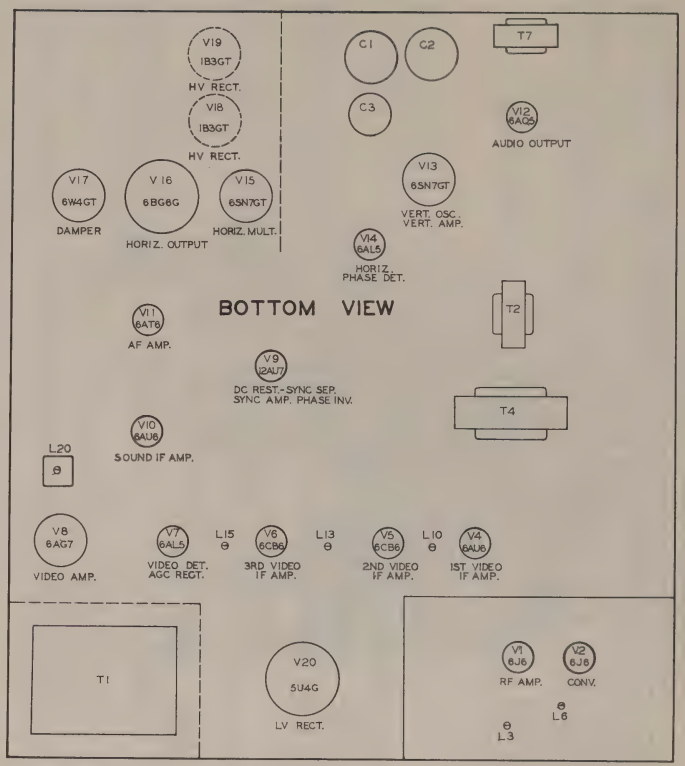


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW- CAPACITOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

TELE KING
MODELS 162, 716, 916C

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube (V15) from its socket.

VIDEO IF ALIGNMENT

If the set has a two tube (TT4) tuner, remove the converter tube and replace it with a 6J6 which has pin 1 removed. If the set has a 3 tube tube tuner (TT3) remove the oscillator tube (V3). This will disable the local oscillator and prevent the possibility of erroneous indications. During video IF alignment the VTVM leads are connected to approximately 2 1/2 volts with respect to chassis. Avoid grounding the VTVM case.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	25.6MC (Unmod.)	Any	DC probe to Point (A). Common to Point (B).	A1, A2	Adjust for maximum deflection.
2.	"	"	23.4MC	"	"	A3, A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	23.5MC (10MC SWP)	21.6MC 22.6MC 25.6MC 26.1MC	Any	Vert. amp. to Point (A). Common to chassis.		Check for response curve similar to figure 1. If necessary retouch A1 thru A4 for proper response.

SOUND IF ALIGNMENT

During sound IF alignment the leads of the VTVM are connected to approximately 140 volts with respect to chassis. Avoid touching or grounding the VTVM case.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	.005MFD	High side to pin 4 (grid) of 6AC7 (V8). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to Point (C). Common to Point (D).	A5, A6, A7, A8	Adjust for maximum deflection. The peak of A8 is very broad. Reduce the generator to obtain a MINIMUM usable indication and observe the VTVM very carefully for maximum deflection.

5. After alignment is completed, tune in a local TV station and advance the contrast control until intercarrier buzz is heard. Carefully adjust A8 for maximum audio output with MINIMUM intercarrier buzz.

THE TUNER PORTION OF THESE RECEIVERS HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE: ALIGNMENT OF THIS PORTION SHOULD NOT BE REQUIRED IN THE FIELD:

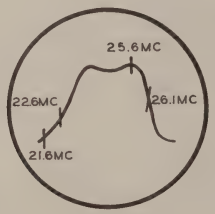
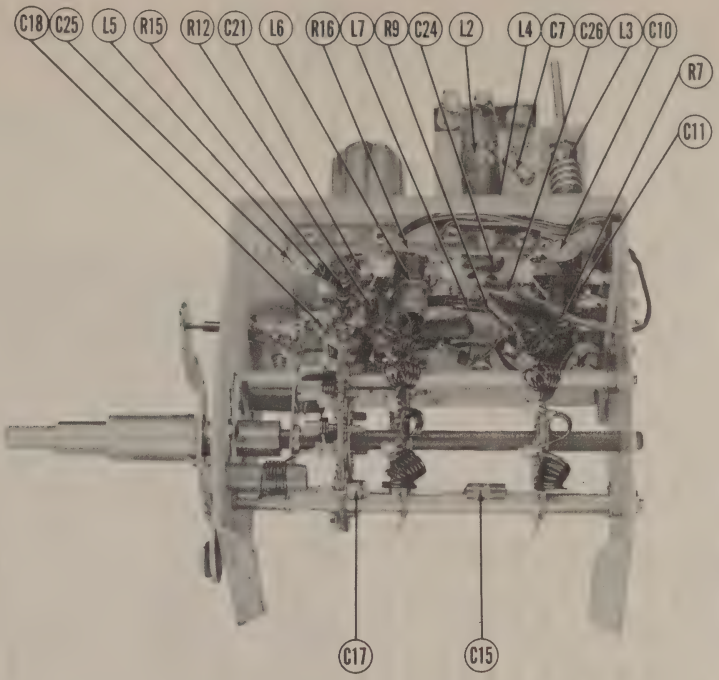
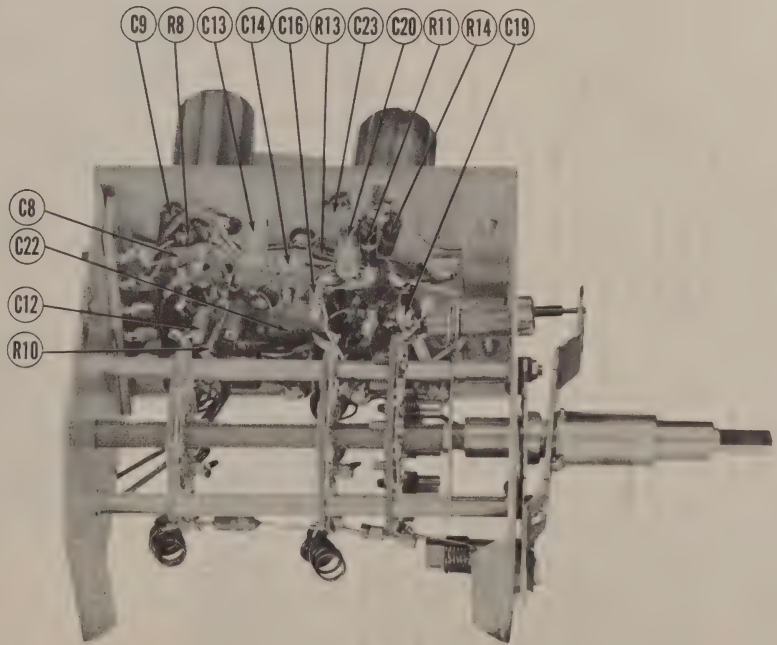


FIG. 1



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	120VDC	120VDC	0V	6.3VAC	-.2VDC	-.2VDC	.8VDC		
V 2	6J6	85VDC	90VDC	6.3VAC	0V	-1.1VDC	§-3.7VDC	0V		
V 3	6J6	NOT USED IN ALL MODELS								
V 4	6AU6	-.2VDC	0V	6.3VAC	0V	135VDC	135VDC	.6VDC		
V 5	6CB6	-.2VDC	.5VDC	6.3VAC	0V	130VDC	130VDC	0V		
V 6	6CB6	0V	1.8VDC	6.3VAC	0V	133VDC	133VDC	0V		
V 7	6AL5	0V	-5.8VDC	6.3VAC	0V	-5.4VDC	0V	-.5VDC		
V 8	6AG7	0V	6.3VAC	0V	-5.3VDC	3.5VDC	175VDC	0V	165VDC	
V 9	12AU7	7.2VDC	0V	1.4VDC	0V	0V	360VDC	0V	18VDC	6.3VAC
V 10	6AU6	#.6VDC	#2.8VDC	#0V	#6.3VAC	#215VDC	#43VDC	#2.8VDC		
V 11	6AT6	#-.6VDC	#0V	#6.3VAC	#0V	#0V	#0V	#55VDC		
V 12	6AQ5	#-7.2VDC	#0V	#0V	#6.3VAC	#185VDC	#220VDC	#-7.2VDC		
V 13	6SN7GT	-35VDC -4VDC	185VDC 80VDC	0V	-6.4VDC 0V	450VDC 390VDC	25VDC 4.5VDC	0V	6.3VAC	
V 14	6AL5	0V	0V	0V	6.3VAC	3VDC	0V	-2VDC		
V 15	6SN7GTA	.3VDC	300VDC	14VDC	-5.2VDC	95VDC	14VDC	0V	6.3VAC	
V 16	6BG6G	0V	6.3VAC	7.4VDC	0V	-7VDC	-7VDC	0V	275VDC	TOP CAP *
V 17	6W4GT	360VDC	0V	510VDC	0V	365VDC	395VDC	#6.3VAC	#0V	
V 18	1B3GT	* DO NOT MEASURE								
V 19	1B3GT	* DO NOT MEASURE								
V 20	5U4G	0V	400VDC	0V	380VAC	-5.7VDC	380VAC	0V	400VDC	
V 21	16HP4A	6.3VAC	1.5VDC	PIN 10 370VDC	PIN 11 130VDC	PIN 12 0V				

TV-PHONO SWITCH IN TV POSITION
FOCUS CONTROL COUNTER CLOCKWISE
§ TAKEN WITH VACUUM TUBE VOLTMETER
# MEASURED FROM PIN 2 OF V12
* DO NOT MEASURE

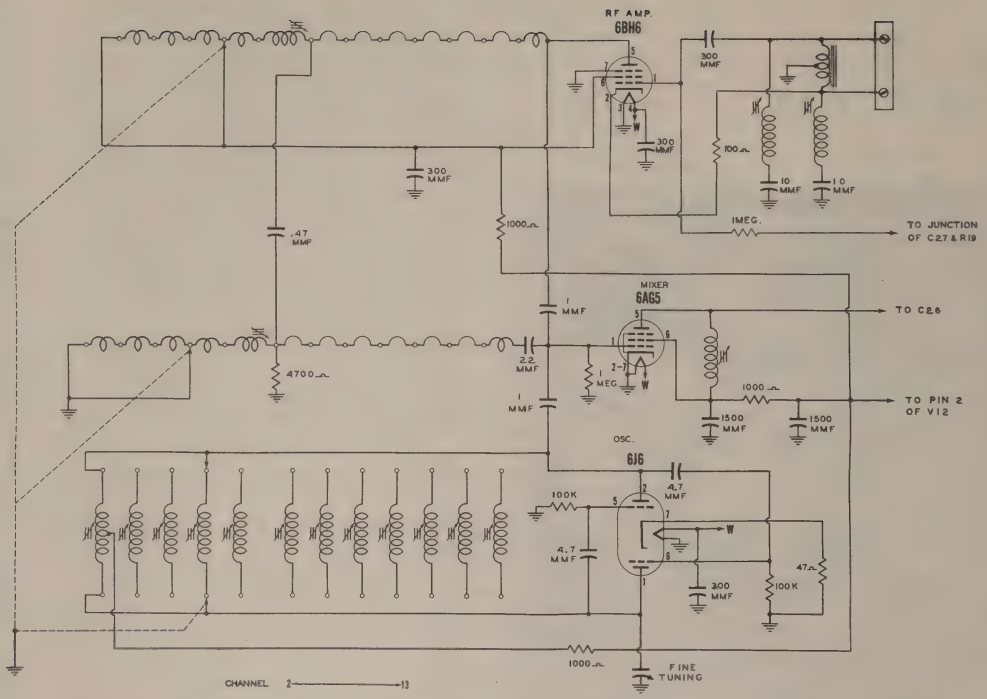
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	#1KΩ	#1KΩ	0Ω	.1Ω	1.8Meg	1.8Meg	50Ω		
V 2	6J6	#5.7KΩ	#11KΩ	.1Ω	0Ω	100KΩ	10KΩ	0Ω		
V 3	6J6	NOT USED IN ALL MODELS								
V 4	6AU6	1.7Meg	0Ω	.1Ω	0Ω	#300Ω	#300Ω	82Ω		
V 5	6CB6	1.7Meg	47Ω	.1Ω	0Ω	#530Ω	#530Ω	0Ω		
V 6	6CB6	.3Ω	180Ω	.1Ω	0Ω	#430Ω	#430Ω	0Ω		
V 7	6AL5	0Ω	1KΩ	.1Ω	0Ω	9.2KΩ	0Ω	680KΩ		
V 8	6AG7	0Ω	.1Ω	0Ω	9.3KΩ	750Ω	†16KΩ	0Ω	#5.6KΩ	
V 9	12AU7	47KΩ	0Ω	270KΩ	0Ω	0Ω	▲28KΩ	1Meg	3.3KΩ	1Ω
V 10	6AU6	#470KΩ	#1KΩ	#0Ω	#.1Ω	†1.2KΩ	†30KΩ	#1KΩ		
V 11	6AT6	#473KΩ	#0Ω	#.1Ω	#0Ω	#0Ω	#0Ω	†330KΩ		
V 12	6AQ5	250KΩ	16KΩ	#0Ω	#.1Ω	†1KΩ	†190Ω	250KΩ		
V 13	6SN7GT	1.1Meg 2.1Meg	▲840KΩ ▲3.3Meg	0Ω	2.2Meg	▲6.3KΩ	5.3KΩ 330Ω	0Ω	.1Ω	
V 14	6AL5	27KΩ	27KΩ	0Ω	.1Ω	4.8Meg	0Ω	4.8Meg		
V 15	6SN7GTA	5.2Meg	▲28KΩ	1.5KΩ	120KΩ	▲290KΩ	1.5KΩ	0Ω	.1Ω	
V 16	6BG6G	Inf.	.1Ω	82Ω	0Ω	1Meg	1Meg	0Ω	†5.2KΩ	TOP CAP ▲125Ω
V 17	6W4GT	†210Ω	Inf.	45KΩ	Inf.	†200Ω	†65Ω	#.1Ω	#0Ω	
V 18	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP ▲150Ω
V 19	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP Inf.
V 20	5U4G	Inf.	20KΩ	Inf.	95Ω	30Ω	95Ω	Inf.	20KΩ	
V 21	16HP4A	.1Ω	270KΩ	PIN 10 †190Ω	PIN 11 80KΩ	PIN 12 0Ω				

TV-PHONO SWITCH IN TV POSITION
FOCUS CONTROL COUNTER CLOCKWISE
MEASURED FROM PIN 2 OF V12
† MEASURED FROM PIN 2 OF V20
▲ MEASURED FROM PIN 3 OF V17

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



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ALTERNATE TUNER SCHEMATIC

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold control to the mid-position of its range.

Adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

Turn the horizontal hold control to maximum counter clockwise, the picture should be out of sync.

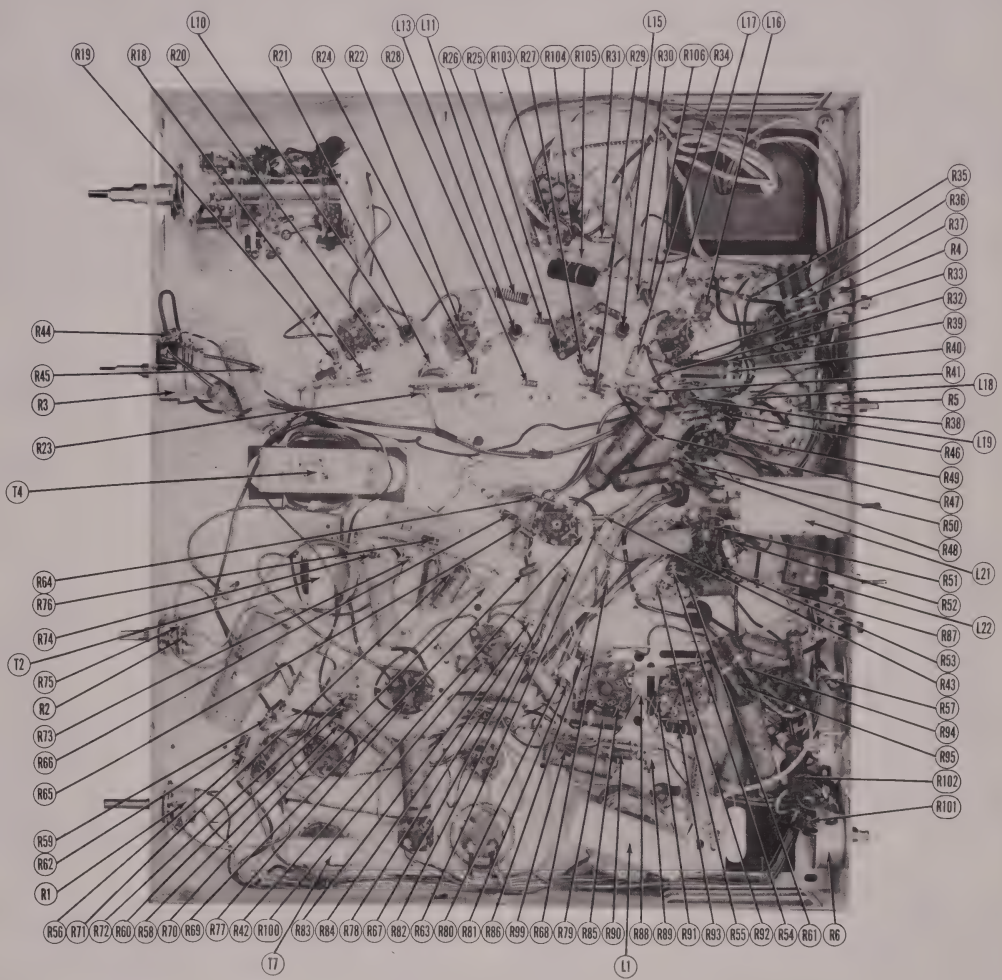
Slowly turn the hold control clockwise and note the least number of bars present just before the picture falls into synchronization. There should be 3 or 4 bars present at the pull in point. The picture should pull in after approximately 1/4 turn of the hold control and should remain in sync over approximately 90 degrees of the hold control rotation.

Adjust the horizontal drive trimmer (B2) for the best compromise between brightness and horizontal linearity.

Adjust the horizontal size slug (B3) until the picture fills the mask.

Adjust the horizontal linearity slug (B4) until the picture is symmetrical from left to right.

Slight readjustment of B2 may be required for optimum results.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: TELE KING PART No.	STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	6J6	6J6	7BF	
B	RF Amplifier	6SH6	6SH6	7CM	
V2A	Converter	6J6	6J6	7BF	
B	Mixer	6AG5	6AG5	7BD	
V3	Oscillator	6J6	6J6	7BF	Used When V1B and V2B Are Used
V4	1st Video IF Amp.	6AU6	6AU6	7BK	
V5A	2nd Video IF Amp.	6CB6	6CB6	6CK	
B	2nd Video IF Amp.	6AU6	6AU6	7BK	
V6A	3rd Video IF Amp.	6CB6	6CB6	6CK	
B	3rd Video IF Amp.	6AU6	6AU6	7BK	
V7	Video Detector - AGC Rectifier	6AL5	6AL5	6BT	
V8A	Video Amplifier	6AG7	6AG7	8Y	
B	Video Amplifier	6AC7	6AC7	8N	
V9	DC Restorer -Sync. Separator -Sync. Amplifier - Phase Inverter	12AU7	12AU7	9A	
V10	Sound IF Amp.	6AU6	6AU6	7BK	
V11A	Ratio Detector - AF Amplifier	6AT6	6AT6	7BT	
B	Ratio Detector - AF Amplifier	6T8	6T8	9E	
V12	Audio Output	6AQ5	6AQ5	7BZ	
V13	Vert. Oscillator - Vert. Amplifier	6SN7GT	6SN7GT	8BD	
V14	Horiz. Phase Detector	6AL5	6AL5	6BT	
V15	Horiz. Mult.	6SN7GTA	6SN7GTA	8BD	
V16	Horiz. Output	6BG6G	6BG6G	5BT	
V17	Damper	6W4GT	6W4GT	4CG	
V18	H.V. Rectifier	1B3GT	1B3GT	3C	
V19	H.V. Rectifier	1B3GT	1B3GT	3C	
V20	L.V. Rectifier	5U4G	5U4G	5T	
V21A	Picture Tube	16HP4A	16HP4A	12D	
B	Picture Tube	16CP4	16CP4	12D	
C	Picture Tube	16DP4	16DP4	12D	
D	Picture Tube	16AP4	16AP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TELE KING PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	CEM-5	AF868J		UPT44445		TVL-3787	▪ Filter
B	40	450							▪ Filter
C	40	450							▪ Filter
C2A	500	5	CEM-7	RP8S6/500		BRH605A		TVA-1103	▲ Filter
B	50	150		AF8GD		UP505		TVA-1404	▲ Decoupling
C3A	20	450	CEM-8	AF884J2J		UPT2I1145		TVL-4766	▲ Decoupling
B	10	450							■ Vert. Output Dec.
C	10	450							▲ Decoupling
D	10	150							V. Amp. Screen
C4	40	450	CET-4	PR5450/40		BR4045A		TVA-1611	Decoupling
C5	1	25	CET-5	PR3150/4		B8IR-25		TVA-1300	Stabilising Cap
C6	100	25	CET-5	PR3S5/100		BR8E5A		TVA-1207	Vert. Output Cathode
C7	10			SII0	D6-100		GP1K-10	19C19	Fixed Trimmer
C8	270			S270	D6-271		GP2K-270	19C31	RF Amp. Cathode
C9	1500			SI500	D6-152		GP2L-0015	29C8	AGC Filter
C10	2000			BPD-002	DD-202		80R-002	29C2	AGC Filter
C11	1500			SI500	D6-152		GP2L-0015	29C8	RF Amp. Fil.
C12	270			S270	D6-271		GP2K-270	19C31	RF Amp. Plate Dec.
C13	5-3				829-3				Variable Trimmer
C14	1				TCZ-1				RF Coupling
C15	.47				TCZ-.5				RF Coupling
C16	100			SI00	D6-101		GP1K-100	19C11	RF Coupling
C17	2.2				TCZ-2.2				Osc. Coupling
C18	39			SI39			GP1K-39		Osc. Feedback
C19	2.2				TCZ-2.2				Osc. Feedback
C20	1-8				829-8				Variable Trimmer
C21	270			S270	D6-271		GP2K-270	19C31	Conv. Decoupling
C22	1500			SI500	D6-152		GP2L-0015	29C8	Conv. Filament
C23	270			S270	D6-271		GP2K-270	19C31	RF Bypass
C24	1500			SI500	D6-152		GP2L-0015	29C8	RF Bypass
C25	10			SI0	D6-100		GP1K-10	19C19	Fixed Trimmer
C26	270			S270	D6-271		GP2K-270	19C31	IF Coupling
C27	2000		CC-22	SI2000	D6-202	1W5D2	GP2C2-002	29C2	AGC Filter †
C28	1000			SI1000	D6-102	1W5D1	GP2L-001	19C1	RF Bypass †
C29	1000		CC-22	SI1000	D6-102	1W5D1	GP2L-001	19C1	1st V. IF Dec. *
C30	1500		CC-22	BPD-005	DD-152	1W5D15	80R-0015	29C8	1st V. IF Fil. *
C31	100	500		1468-0001	D6-101	5W5T1	GP1K-100-M	19C11	IF Coupling
C32	1000		CC-22	SI1000	D6-102	1W5D1	GP2L-001	19C1	AGC Filter *
C33	1000		CC-22	SI1000	D6-102	1W5D1	GP2L-001	19C1	2nd V. IF Dec. *
C34	1500		CC-22	BPD-0015	DD-152	1W5D15	80R-0015	29C8	2nd V. IF Fil. *
C35	100		CC-31	SI00	D6-101	5W5T1	GP1K-100	19C11	IF Coupling †
C36	1000		CC-22	SI1000	D6-102	1W5D1	GP2L-001	19C1	RF Bypass †
C37	1000		CC-22	SI1000	D6-102	1W5D1	GP2L-001	19C1	3rd V. IF Dec. †
C38	1500		CC-22	BPD-0015	DD-152	1W5D15	80R-0015	29C8	3rd V. IF Fil. *
C39	5000		CC-22	BPD-005	DD-502	1D5D5	81L-005	29C1	3rd V. IF Cath. *
C40	100		CC-31	SI00	D6-101	5W5T1	GP1K-100	19C11	IF Coupling †
C41	120		CC-312	SI120	D6-121	5W5T1	GP2K-120	19C32	IF Coupling
C42	.1	600	CP-6-01	P688-1	DF-104	PTE6S1		67M-P1	AGC Filter
C43	.01	600	CP-4-11	P688-01	D6-103	PTE8S1	82L-01	67M-S1	DAGC Decoupling
C44	1000			SI1000	D6-102	1W5D1	GP2L-001	19C1	DAGC Decoupling †
C45	2000		CC-22	SI2000	D6-202	1W5D2	GP2M-002	29C2	RF Bypass †
C46	.1	600	CP-6-01	P688-1	DF-104	PTE6P1		67M-P1	RF Bypass
C47	1000		CC-22	SI1000	D6-102	1W5D1	GP2L-001	19C1	RF Bypass
C48	2000		CC-22	SI2000	D6-202	1W5D2	GP2M-002	29C2	V. Det. -AGC Fil. †
C49	5		CC-55	SI5	TCZ-4.7	5W5T5	GP1K-5	MS-55	V. Diode Filster
C50	680		CC-368	SI680	D6-681	1W5T7	GP2K-680	19C17	V. Amp. Cathode
C51	470		CC-347	SI470	D6-471	5W5T5	GP2K-470	19C15	V. Amp. Cathode

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TELE KING PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C52	.1	600	CP-6-01	P688-1	DF-104	PTE6P1		67M-P1	Video Coupling
C53	.1	600	CP-6-01	P688-1	DF-104	PTE6P1		67M-P1	Pic. Tube Cathode
C54	39	500	CC-439	1468-00004	D6-390	5W5Q4	GP1K-39	1FM-44	S. IF Coupling
C55	.02	500	CP-6-23	P688-02	DF-203	PTE8S2		67M-S2	S. IF Decoupling
C56	.022	1000	CP-6-12	P1088-022	DF-203	PTE16S2		MB-S22	S. IF Decoupling
C57	.005	600	CP-6-25	P688-005	D6-502	PTE8D5	81L-005	67M-D5	S. IF Screen
C58	.005	600	CP-6-21	P688-001	D6-102	PTE8D1	GP2L-001	67M-D1	Diode Load Cap
C59	.002	600	CP-6-22	P688-002	D6-202	PTE8D2	GP2M-002	67M-D2	De-emphasis
C60	.005	600	CP-6-25	P688-005	D6-502	PTE8D5	81L-005	67M-D5	Audio Coupling
C61	.01	600	CP-6-11	P688-01	D6-103	PTE8S1	82L-01	67M-S1	Audio Coupling
C62	.005	600	CP-6-25	P688-005	D6-502	PTE8D5	81L-005	67M-D5	Audio Coupling
C63	.02	600	CP-6-23	P688-02	DF-203	PTE8S2		67M-S2	Audio Coupling
C64	.05	600	CP-6-15	P688-05	DF-503	PTE8S5		67M-S5	Bias Filter
C65	.005	600	CP-6-25	P688-005	D6-502	PTE8D5	81L-005	67M-D5	Output Plate
C66	22	500	CM-422	SI22	D6-220	5W5Q25	GP1K-22	19C23	Sync. Sep. Plate
C67	.01	600	CP-6-11	P688-01	D6-103	PTE8S1	82L-01	67M-S1	Sync. Coupling
C68	.002	600	CP-6-22	P688-002	D6-202	PTE8D2	GP2M-002	67M-D2	Integrator Net
C69	.005	600	CP-6-25	P688-005	D6-502	PTE8D5	81L-005	67M-D5	Integrator Net
C70	.005	600	CP-6-25	P688-005	D6-502	PTE8D5	81L-005	67M-D5	Integrator Net
C71	.4700	500	CP-6-25	1467-005	D6-472	IDSD5	GP2M-0047	1FM-25	Vert. Osc. Grid
C72	.1	600	CP-6-01	P688-1		PTE6P1		67M-P1	Vert. Discharge
C73	.25	400	CP-4-025	P488-25		QT4P25		67M-P25	Vert. Sweep Coupling
C74	.005	600	CP-6-21	P688-001	D6-102	PTE8D1	GP2L-001	67M-D1	Horiz. Sync. Coupling
C75	.001	600	CP-6-31	P688-001	D6-102	PTE6D1	GP2L-001	67M-D1	Horiz. Sync. Coupling
C76	.01	600	CP-6-11	P688-01	D6-103	PTE8S1	82L-01	67M-S1	Voltage Divider
C77	.05	600	CP-6-15	P688-05	DF-503	PTE8S5		67M-S5	Horiz. Feedback
C78	.005	600	CP-6-25	P688-005	D6-502	PTE8D5	81L-005	67M-D5	AFC Filter
C79	.05	600	CP-6-15	P688-05	DF-503	PTE8S5		67M-S5	AFC Filter
C80	3900	500	CM-239	1464-004		IDRSD4		MS-24	Fixed Trimmer
C81	330	500	CM-333A	1468-00035	D6-331	5R5T3	GP2K-330	1FM-335	Horiz. Feedback
C82	390	500	CM-339	1468-0004	D6-391	5W5Q4	GP2K-390	1FM-34	Horiz. Discharge
C83	270	500	CM-327	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	Horiz. Sweep Coupling
C84	.05	600	CP-6-15	P688-05	DF-503	PTE8S5		67M-S5	Horiz. Output Screen
C85	.25	400	CP-4-025	P488-25		QT4P25		67M-P25	Horiz. Output Cathode
C86	.1	600	CP-6-01	P688-1		PTE6P1		67M-P1	Damper Filter
C87	.035	600	CO-6-135	P688-035					Damper Filter
C88	.25	400	CP-4-025	P488-25		QT4P25		67M-P25	Horiz. Sweep Coupling
C89	330	500		1468-0003	D6-331	5R5T3	GP2K-330	MS-33	Fixed Trimmer †
C90	330	500		1469-0003	D6-331	5R5T3	GP2K-330	MS-33	Fixed Trimmer †
C91	500	10000	CHV-35A	HV10B	TVL-500				Voltage Doubler Cap
C92	500	10000	CHV-35C	HV10C	TV3-501				H.V. Filter
C93	500	10000	CHV-35	HV10B	TV1-501				H.V. Filter
C94	.022	600	CP-6-22	P688-022	DF-203	PTE8S2		67M-S22	Line Filter

* Some models use 2000MMF in this application.
† Not used in all models.
† Some models use 120MMF 1500 volts in place of items C89 and C90.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TELE KING PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	250KΩ	½	P-7	Q13-133	AG-60-2	B-60-S	Volume Control
B	Shaft		Not req.	Not req.	FS-3	Not req.	Attach to R1A Per Instructions
C	Switch		Not req.	76-1	SWB	Not req.	Attach to R1A Per Instructions
				Concentrikit			
R2A	1 meg	½		B11-137 *			Vertical Hold Control - Front
B	5 MEG	½	PD-5	B11-123 *	RTV-146	SBB-584	Horizontal Hold Control - Rear
C	Shaft End			E-187 *			Attach Per Instructions In "Concentrikit"
R3A	750Ω	2	PD-4		RTV-145		Contrast Control - Wire Wound - Tapped @ 500Ω - Front
B	100KΩ	½					Brightness Control - Rear
R4A	5000Ω	1	P-2	Q11-114	AM-19-S	AN-10	Vertical Linearity Control
B	Shaft		Not req.	Not req.	FK8-1/4	AK-1	Attach to R4A Per Instructions
R5A	2.5Meg	½	P-5	Q11-239	AM-84-S	AN-83	Height Control
B	Shaft		Not req.	Not req.	FK8-1/4	AK-1	Attach to R5A Per Instructions
R6	1500Ω	4	P-6		RTV-6	SVP-594	Focus Control - Wire Wound

* Additional parts to be used with "Concentrikit".

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TELE KING PART No.	IRC PART No.	IDENTIFICATION CODES: ALL RESISTORS ‡ 10% UNLESS OTHERWISE SPECIFIED
R7	150KΩ	20%			RF Amp. Grid
R8	510				RF Amp. Cathode
R9	10000			BTS-10000	RF Amp. Plate Decoupling - See Note 1
R10	47000			BTS-47000	RF Coil Shunt
R11	100KΩ	20%			Mixer Grid
R12	10KΩ				Mixer Plate
R13	100KΩ	20%		BTS-100K	Series Test Point
R14	10KΩ				Osc. Grid
R15	47000			BTS-47000	Osc. Plate
R16	10000			BTS-10000	Decoupling
R17	100Ω		RC-101-2	BTS-100	Decoupling - See Note 1
R18	330Ω		RC-331-2	BTS-330	AGC Network
R19	8200Ω		RC-822-2		1st Video IF Amp. Grid - See Note 2
R20	82Ω		RC-820-2	BTS-82	1st Video IF Amp. Cathode
R21	8200Ω		RC-822-2		2nd Video IF Amp. Grid
R22	47Ω		RC-470-2		2nd Video IF Amp. Cathode - See Note 3
R23	100Ω		RC-101-2	BTS-100	Decoupling
R24	330Ω		RC-331-2	BTS-330	3rd Video IF Amp. Decoupling - See Note 1
R25	6800Ω		RC-682-2		3rd Video IF Transformer Shunt - See Note 4
R26	180Ω		RC-181-2	BTS-180	3rd Video IF Amp. Cathode - See Note 3
R27	330Ω		RC-331-2	BTS-330	3rd Video IF Amp. Decoupling - See Note 1
R28	100Ω		RC-101-2	BTS-100	Decoupling
R29	100Ω	20%	RC-101-2	BTS-100	Decoupling
R30	8200Ω		RC-822-2	BTS-8200	Video Det. Diode Load
R31	1000Ω		RC-102-2	BTS-1000	Bias Network
R32	1Meg		RC-105-2	BTS-1Meg	AGC Network
R33	680KΩ		RC-684-2	BTS-680K	AGC Network
R34	39KΩ		RC-393-5	BTA-39K	Voltage Divider
R35	120Ω		RC-121-2		Parasitic Suppressor

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TELE KING PART No.	IRC PART No.	IDENTIFICATION CODES
R36	44KΩ	2	RC-443-8		Video Amp. Screen
R37	44KΩ	2	RC-443-8		Video Amp. Screen
R38	22KΩ	1	RC-223-5	BTA-22K	Voltage Divider
R39	54KΩ	2	RC-543-8		Video Amp. Plate
R40	54KΩ	2	RC-543-8		Video Amp. Plate
R41	5600Ω	1	RC-562-5	BTA-5600	Voltage Divider
R42	270KΩ	1	RC-274-2	BTS-270K	RC Restorer Diode Load
R43	2200Ω	1	RC-222-2	BTS-2200	Picture Tube Grid
R44	18KΩ	1	RC-183-2	BTS-18K	Picture Tube Cathode
R45	220KΩ	1	RC-224-2	BTS-220K	Voltage Divider
R46	470KΩ	1	RC-474-2	BTS-470K	Sound IF Amp. Grid
R47	1000Ω	1	RC-102-2	BTS-1000	Sound IF Amp. Cathode
R48	100KΩ	1	RC-104-2	BTS-100K	Sound IF Amp. Screen
R49	1000Ω	1	RC-102-2	BTS-1000	Sound IF Amp. Decoupling
R50	22KΩ	1	RC-223-5	BTS-22K	Voltage Divider
R51	47KΩ	1	RC-473-2	BTS-47K	Ratio Det. Diode Load
R52	47KΩ	1	RC-473-2	BTS-47K	Ratio Det. Diode Load - See Note 1
R53	15KΩ	1	RC-153-2	BTS-15K	De-emphasis
R54	470KΩ	1	RC-474-2	BTS-470K	AF Amp. Grid
R55	470KΩ	1	RC-474-2	BTS-470K	AF Amp. Grid
R56	330KΩ	1	RC-334-2	BTS-330K	AF Amp. Plate
R57	2.7Meg	1	RC-275-5	BTA-2.7Meg	Phono Input Shunt
R58	100KΩ	1	RC-104-2	BTS-100K	Output Grid
R59	330KΩ	5%	RC-334-2	BTS-330K-5%	Voltage Divider
R60	180KΩ	5%	RC-184-2	BTS-180K-5%	Voltage Divider
R61	2700Ω	1	RC-272-2	BTS-2700	Output Cathode - See Note 5
R62	390Ω	1	RC-391-5	BTA-390	Decoupling
R63	820KΩ	1	RC-824-2	BTS-820K	Sync. Sep. Plate
R64	47KΩ	1	RC-473-2	BTS-47K	Voltage Divider
R65	1Meg	1	RC-105-2	BTS-1Meg	Sync. Amp. - Phase Inv. Grid
R66	3300Ω	5%	RC-332-2	BTS-3300-5%	Sync. Amp. - Phase Inv. Cathode - See Note 6
R67	3300Ω	5%	RC-332-2	BTS-3300-5%	Sync. Amp. - Phase Inv. Plate - See Note 6
R68	3300Ω	5%	RC-332-2	BTS-3300-5%	Sync. Amp. - Phase Inv. Plate - See Note 6
R69	22KΩ	1	RC-223-2	BTS-22K	Integrator
R70	8200Ω	1	RC-822-2	BTS-8200	Integrator
R71	8200Ω	1	RC-822-2	BTS-8200	Integrator
R72	1Meg	1	RC-105-2	BTS-1Meg	Vert. Osc. Grid
R73	820KΩ	1	RC-824-2	BTS-820K	Vert. Osc. Plate
R74	6.8Meg	1	RC-685-2	BTS-6.8Meg	Voltage Divider
R75	100KΩ	1	RC-104-2	BTS-100K	Voltage Divider
R76	680MΩ	1	RC-682-3	BTS-680M	Vertical Peaking
R77	2.2Meg	1	RC-225-2	BTS-2.2Meg	Vertical Amp. Grid
R78	330Ω	1	RC-331-2	BTS-330	Vertical Amp. Cathode
R79	8200Ω	2			Vertical Amp. Decoupling - See Note 7
R80	1Meg	1	RC-105-2	BTS-1Meg	Horizontal AFC Filter - See Note 9
R81	1Meg	1	RC-105-2	BTS-1Meg	Horizontal AFC Filter - See Note 9
R82	100KΩ	1	RC-104-2	BTS-100K	Horizontal Phase Det. Diode Load
R83	100KΩ	1	RC-104-2	BTS-100K	Horizontal Phase Det. Diode Load
R84	4.7Meg	1	RC-475-2	BTS-4.7Meg	Horizontal Phase Det. Diode Load
R85	1500Ω	1	RC-152-2	BTS-1500	Horizontal MV Cathode
R86	68KΩ	1	RC-683-2	BTS-68K	Horizontal MV Grid
R87	5600Ω	1	RC-562-2	BTS-5600	Horizontal MV Plate
R88	270KΩ	1	RC-274-2	BTS-270K	Horizontal MV Plate
R89	22KΩ	1	RC-223-5	BTA-22K	Horizontal AFC Output
R90	22KΩ	1	RC-223-5	BTA-22K	Decoupling
R91	68Ω	1	RC-680-3		Parasitic Suppressor
R92	1Meg	1	RC-105-2	BTS-1Meg	Horizontal Output Grid
R93	82Ω	1	RC-820-5	BW-1-82	Horizontal Output Cathode
R94	10KΩ	2	RC-103-8	BTS-10K	Horizontal Output Screen
R95	10KΩ	2	RC-103-8	BTS-10K	Horizontal Output Screen
R96	3.3Ω	1	RC-33G-2		H.V. Rectifier Filament
R97	3.3Ω	1	RC-33G-2		H.V. Rectifier Filament
R98	2Meg	2	RDCH205		H.V. Rectifier Load
R99	4700Ω	20%	RC-472-3	BTS-4700H	Horizontal Feedback
R100	27KΩ	1	RC-273-2	BTS-27K	Horizontal Phase Det. Diode Load
R101	1200Ω	2	RC-122-8	BTS-1200	Focus Coil Shunt - See Note 1
R102	270Ω	2	RC-271-8	BW-2-270	Focus Coil Shunt - See Note 8
R103	15Ω	1	RC-150-5	BW-1-15	Bias Network
R104	15Ω	1	RC-150-5	BW-1-15	Bias Network - See Note 1
R105	110KΩ	2	RC-114-7		Isolation
R106	22K	1	RC-223-2		4th Video IF Transformer Shunt - See Note 1

Note 1. Not used in all models.
Note 2. Some models use 10KΩ resistor in this application.
Note 3. Some models use 82Ω resistor in this application.
Note 4. Some models use 8200Ω resistor in this application.
Note 5. Some models use 4700Ω resistor in this application.
Note 6. Some models use 3900Ω resistor in this application.
Note 7. Some models use 6800Ω resistor in this application.
Note 8. Some models use 470Ω resistor in this application.
Note 9. Some models use single 470KΩ resistor in place of R80 and R81.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: TELE KING PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC @ 1.8A	520VCT @ .200ADC	5VAC @ 3A	6.3VAC @ 2.4A SEC. 4 6.3VAC @ 5.5A	T-106			

PARTS LIST CONTINUED ON PAGE 15

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	DC RESISTANCE		TELE KING PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.					
T2	163Ω	890Ω	T-104	A-8111 ①	A-3000	TB0-3	Vertical Block Osc.
T3	119Ω	11Ω	T-109		HVO-5	TFB-4	Horizontal Output
	Tap 93Ω	Tap .7Ω					
		SEC. 2					
		0Ω					
		SEC. 3					
		0Ω					
T4	620Ω	11Ω	T-107	A-8112 ①	A-3038	TS0-3	Vertical Output
T5A	17.5Ω			DY-7	MD-70		Horizontal Deflection Coil
B	63Ω						Vertical Deflection Coil
T6	250Ω		LF-3	FC-10	MF-1		Focus Coil

① Drill new mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		TELE KING PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T7	5.6KΩ	3.2Ω	420Ω	.72Ω	T-102	A-3349 ①	A-2930	RO-9 ①	① Drill new mounting hole.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE @ CURRENT 1000 ~	TELE KING PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.200ADC	64Ω	4 Henries	LC-3	C-2325 ①	C-2991 ①	TR4200 ①	① Drill new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	TELE KING PART No.	MEISSNER PART No.	IRC PART No.	
L2	Antenna Coil	1.3Ω	1.3Ω				
L3	FM Trap	0Ω				CLA	.82 Microhenry
L4	RF Choke	.6Ω					
L5	Conv. Plate Coil	0Ω					
L6	1st Video IF	.5Ω					
L7	Fil. Choke	0Ω		LC-1			Not used in all models
L8	Fil. Choke	0Ω		LC-1			Not used in all models
L9	Fil. Choke	0Ω		LC-1			Not used in all models
L10	2nd Video IF	.2Ω		LV-6			
L11	Fil. Choke	0Ω		LC-1			
L12	RF Choke			LC-4			Not used in models using L13A
L13A	3rd Video IF	.3Ω	.3Ω				Used in models with L12
B	3rd Vide IF	.2Ω		LV-6			Not used in models using L15A
L14	RF Choke			LC-4			
L15A	4th Video IF	.3Ω	.3Ω				Used in models with L14
B	4th Video IF	.2Ω		LV-6			Green Dot
L16	Peaking	9Ω		LP-5			Red Dot
L17	Peaking	12Ω		LP-6			Yellow Dot (Wound on 13KΩ resistor)
L18	Peaking	7.1Ω		LP-7			Blue Dot
L19	Peaking	15Ω		LP-8			
L20	Sound IF	2.7Ω	2.6Ω	LT0-3			
L21	Ratio Det. Trans.	6.5Ω	.7Ω	LRD-1			
L22	Horiz. Freq.	58Ω		LH0-2			
L23	Horiz. Lin.	32Ω		L-20HR3			
L24	Width Coil	1Ω		L-20HR4			

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			TELE KING PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M1	3AG	.25Ω			318.250		

MISCELLANEOUS

ITEM No.	PART NAME	TELE KING PART No.	NOTES
M2A	RF Tuner		
B	RF Tuner		
M3	Crystal		1N-60 (Ratio Detector)
M4	Crystal		1N-60 (Ratio Detector)
M5	Switch		TV-Phono
M6	Ion Trap	IT-2	
B2	Trimmer	CT-1	Horizontal Drive (25-280MMF)